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## Steel Nationalisation Plans Go Forward

**G**REAT concern was aroused in industry last week at the decision of the Socialists to resurrect at this critical time the vexed question of steel control. The decision announced in the House of Commons to take over the industry as soon as practicable after January 1, 1951, showed once again that the Government is determined if at all possible to control in its present lifetime an industry which since the war has more than any other consistently produced well above its quota of essential materials, and in which there has been no major industrial strife. The united effort now required to strengthen our defences emphasises the undesirability of attempting to force through a fundamental change in the structure of an industry which is rendering such valuable service to the country. Moreover, though five years ago the Government could with some justification claim a mandate for this step, the verdict given at the General Election in February last was such as no longer to lend authority to any attempt to put the Iron & Steel Act into effect. For a long time the British Iron & Steel Federation has consistently represented to the Government that if its purpose is to ensure that the policies of the industry conform with national needs, then this objective can be better obtained through a statutory board exercising supervisory functions, on the lines of the Iron & Steel Board which operated from 1946-

1949. Neither has the Federation deviated from its conviction that the nationalisation of iron and steel would be highly damaging to the efficiency of the industry and against the public interest. The Opposition censure motion on the nationalisation of steel was defeated in the House of Commons on September 19 by 306 votes to 300.

## Railway Wage Claims Rejected

**L**AST month, as recorded in our issue of August 25, the Railway Staff National Council upheld an offer by the Railway Executive to increase the lowest weekly wage rate for adult male workers in the conciliation grades from 92s. 6d. to 96s., with a comparable adjustment for clerical staff at the corresponding level. This has been estimated to cost £2 million a year. Almost immediately afterwards the Railway Executive was faced with a further claim from the N.U.R. for a wage increase amounting to 10 per cent., from the R.C.A. for a 7½ per cent. rise, and from the A.S.L.E.F. for an increase of 15 per cent. These claims have now been considered and quite rightly turned down by the Railway Executive because of the present financial position. There is little doubt, however, that all three unions will press their claims further, especially as delegates to the recent Trades Union Congress rejected even the "modified" policy of wages restraint. However, a resolution moved at the Congress by Mr. J. B. Figgins, General Secretary, N.U.R., calling for a repeal of the compulsory arbitration order, was defeated by a very large majority.

## Surplus Railway Capacity

**T**HE Federation of British Industries has addressed to the Ministry of Transport a memorandum, which in essence states that "in peacetime there is surplus capacity on the railways" of Britain; that the extent of this should be ascertained by an independent survey; that the capacity required for strategic purposes should become a charge on the Defence Estimates; and that "capacity and facilities" not required should be dismantled or abandoned. The memorandum does not say what is meant by railway capacity. It suggests that more be done to close unremunerative stations and sections of line, apparently ignoring the constant detailed study of this problem by the Railway Executive, and the disappointingly small economies (let alone loss of goodwill and other disadvantages) often resulting from such closing. "This proposal," it is claimed, "is not a subsidy"; but it is not stated what maintenance by the taxpayer through the Defence Estimates would be of strategic railway capacity, which would permit of lower rates for users of "civilian" railway capacity. The complex problem of railway costs is not mentioned. The memorandum indeed is not clear on several points. What is clear is that implementation of its proposals would result in subsidy of many more railway users than are now subsidised by uneconomic railway charges.

## G.N.R.(I.) Winter Services

**T**HE G.N.R.(I.) winter timetable, which operated from September 4, contains several alterations on the main lines but, in general, the services resemble those run last winter. On and from Monday, October 2, the morning "Enterprise" express will run through from Belfast to Cork. Leaving Belfast at 10.30 each morning (Sundays excepted), it will call at Dublin at 12.45, Limerick Junction at 3.55, and arrive at Cork at 5.15 p.m. The return "Enterprise" will leave Cork at 1.15 p.m., Limerick Junction at 2.38, Dublin at 5.30, and arrive in Belfast at 7.45 p.m. There will be first and third class accommodation only on the train, and seats will be bookable in advance. A feature of this new service is the avoidance of Dublin Kingsbridge, as the train runs in and out of Amiens Street, where reversal is necessary. The journey time throughout is 6 hr. 45 min., but the actual running time is about 5 hr. 50 min., as 45 min. are allowed in Dublin for Customs and 7 min. at Limerick Junction for taking water. Certain steam trains on the main and secondary lines will be replaced by new

diesel trains, four more of which will go into service shortly. Before the end of September the "Enterprise" expresses from Dublin in the morning and Belfast in the evening, also the 2.10 express, Belfast to Derry, and the return 6.40 p.m. Derry to Belfast, will be operated by diesel trains. When these alterations are made, 25 per cent. of the daily mileage run by all trains on the G.N.R.(I.) system will be operated by diesel railcars or railbuses.

### Overseas Railway Traffics

**D**URING July there was a marked improvement in the net earnings of both Canadian National Railways and the Canadian Pacific Railway compared with the same month last year. At £2,100,000 the net earnings of the C.N.R. were £1,968,000 above those of 1949, and the corresponding figures for the C.P.R. were £1,281,000 and £714,000 respectively. Aggregate net earnings of the C.N.R. to date, at £7,598,000, exceed those of 1949 by £7,149,000. On the C.P.R. the aggregate net earnings to the end of July were £4,330,000, an increase of £2,766,000 over the previous year. During the fortnight ended August 27 the improvement in the Antofagasta (Chili) & Bolivia Railway traffic amounted to £21,480, though the total is still £160,880 below that of last year. The Paraguay Central Railway showed an increase in gross receipts for the fortnight ended September 1 of G97,781 and aggregate receipts since July 1 are G366,946 higher than in 1949. The International Railways of Central America showed a net increase for July of \$57,793 compared with a loss of \$3,001 in July, 1949. Total earnings of South African Railways in the week ended August 29 amounted to £1,657,211 compared with £1,487,213 for the corresponding week of 1949.

### Argentine Railway Debts

**D**ESPITE the Decrees by the Argentine Government, mentioned in our August 18 and 25 issues, placing at the disposal of the Argentine Railway Purchasing Commission in London funds totalling some £3,500,000 for liquidation of debts to British manufacturers of railway equipment, the money has not, it seems, arrived. Meanwhile, the total debt is admitted to be £7,000,000, and British manufacturers must continue to wait for their money, as they have waited for many months past. The failure of the Argentine Government to implement the Decrees is hard to understand in the light of the statement in one Decree, that it is important to maintain a flow of British equipment to the Argentine National Railways and that the British products cannot be substituted by other types or obtained from other countries. The last statement refers presumably to the quality of British design and workmanship as well as to the factor of exchange, which may well render unattractive any prices which could be quoted by manufacturers in U.S.A., for instance, or Germany or Belgium. It is nearly 100 years since *La Portena* was landed on Argentine soil, the first of the long series of British-built locomotives. (Intended for a broad-gauge Indian line, she was used in construction of what is now the D. F. Sarmiento Railway, and caused the adoption of the 5 ft. 6 in. gauge in Argentina.) It would be a pity if a connection so beneficial to either party were broken after so long.

### Assam Link Construction Details

**I**N our issue of July 7, 1950, we published an article describing generally the construction of the Assam Rail Link. Further details which have since reached us are worth recording. For instance, in the construction of "Bell bund" guide banks for training very fast-flowing large rivers, with bed slopes up to 1 in 175 and velocities sometimes reaching 20 ft. p.s., six-ton cement concrete blocks were used in the aprons instead of the more usual one-man-load boulder pitching. On the slopes of the guide banks the boulder pitching was grouted to prevent its disturbance. Also, for making the 16-in. x 8-in. x 8-in. hollow concrete blocks for buildings, power-driven machines

were ordered from the United States, which, once work was in full swing, turned out over 10,000 blocks a day. A variety of earth-moving machinery was also obtained from America, an important factor in the moving of nearly 2,000,000 cu. ft. of earthwork required throughout the new line. Concrete was used for almost all purposes, as plenty of sand and shingle, but no soil suitable for brickmaking was available in the area traversed. Some other features of this construction work, previously referred to in the article quoted above, are illustrated on page 309.

### World Markets for Machinery in 1949

**A** RECENT analysis by the British Engineers' Association of the origin and destination of all types of machinery and electrical goods and apparatus (except railway rolling stock, road vehicles, and aircraft) exported by the leading manufacturing countries in 1949, yields some surprises. Thus the U.S.S.R. imported more machinery from the United Kingdom than from any other of the chief manufacturing countries, though no figures are available of Russian imports from Eastern Germany; even so, such imports (£7 million worth from Britain) must be small compared with Russia's very large home consumption. Even if the U.S.A. are known to be, overwhelmingly, Canada's chief outside supplier of hardware, Sweden's position higher in the list than Canada as a buyer from Great Britain is surprising, and partly due to the present restricted output of Germany. The industrial effort of U.S.A. is significant: British exports of machinery to India totalled £48 million, against nearly £24 million from America, and British exports to Australia £34 million, against £12 million from the U.S.A., whilst the South American countries generally bought far more from U.S.A. than from Britain, and to Near Eastern countries, exports from Britain were slightly exceeded by those from U.S.A. Machinery exports from Western Germany were already, in 1949, some 3 per cent. of the world total, against 17 per cent. for the same territory in 1939; how soon Japanese competition will again be really formidable is problematical. Meanwhile, Britain last year supplied one quarter of the world's imports of machinery and electrical goods, and the U.S.A. one half.

### An Unusual Bridge Design

**A**N interesting example of a special type of steel girder underbridge—constructed by the former Southern Railway in 1936 to meet unusual conditions—is mentioned and illustrated in the report compiled by Mr. A. Dean, Chief Officer, Engineering (Works), British Railways Executive, on Question I of the International Railway Congress Association, 1950 Session, summarised in this issue. The bridge in question was specially designed to fulfil requirements of headroom in relation to span and available construction depth, in the reconstruction of Archer Street Bridge. The clear span is 54 ft. and that between centres of rocker bearings 72 ft. 6 in. The main girders, however, extend as cantilevers 15 ft. 6 in. beyond the bearings in the form of continuous end spans. A pre-determined loading was applied by jacking at the outer ends of these short end spans and the loading was retained at a recorded value by wedging each girder-end against a crosshead anchored into the masonry abutment. The design is aesthetically satisfactory, and as a form of pre-stressed construction, enabled a comparatively shallow construction depth to be attained, with a deck-type construction most appropriate for the site.

### The North American Railway Strikes

**T**HE nine days' strike on the Canadian railways, which began on August 22, ended promptly with the passage of the Bill by the Canadian Government providing for the resumption of work and the settlement of the dispute by further negotiations. A similar nation-wide strike on the United States railways, which had been called for August 28, was averted only by the issue of President Truman's order for placing the railways under Army control. Under the new Canadian legislation, the railways

and employees have until October 15 to settle their differences. If, at the end of this time, no agreement has been reached, the Government will appoint an arbitrator to deal with all the issues involved in determining a collective agreement. The Act also authorised an immediate increase of four cents an hour to existing wages. In determining a settlement the arbitrator's authority is circumscribed within the limits of proposals, outlined in our issues of August 18 and 25, already made by the parties to the dispute before the breakdown in negotiations. Before normal working was resumed the Canadian strike had disrupted many industries, thrown thousands out of work in addition to the 125,000 railway employees who precipitated the stoppage, caused heavy loss of perishable goods, suspension of surface mails and telegraph facilities, and occasioned great inconvenience to thousands of prospective travellers. The United States strikes on three railways at Cleveland, Louisville and St. Paul had likewise been responsible for a serious disruption in the local economy before the President's action. With the railways in North America already facing severe economic difficulties such strikes will hardly help to attract the increased revenue of which they are in need, a situation that must ultimately have an adverse effect upon employees as well as on the employers.

### The Fifteenth International Railway Congress

THE choice of Rome as the venue of the 15th International Railway Congress, which commences on September 25, is particularly appropriate from several points of view. Apart from the incidence of the Holy Year, which draws to Rome visitors from all parts of the world, and the very nature and situation of the city, which make it an ideal centre for any international gathering concerned with an activity of civilised man, Rome in 1950 has much of special interest for railwaymen as the headquarters of the Italian State Railways. In 1947 there were few railways in belligerent countries, despite the strenuous efforts already made by many systems to rehabilitate themselves, which were not severely damaged or suffering from lack of maintenance, and it was therefore in her traditional rôle of neutral that Switzerland (whose railways, however, were even then by no means unaffected by the war) offered hospitality, at Lucerne, to the 14th International Railway Congress, the first to be held since the cessation of hostilities. In 1950, it is particularly fitting that the capital of Italy, whose railway system was one of the most severely damaged during the war, and one of those to have made the most remarkable recovery since, should be the seat of the first session to be held in anything approaching normal conditions since 1939. The damage suffered by the Italian State Railways, and their post-war recovery, were described by Signor Giovanni di Raimondo, their Director-General, in our last week's issue.

The programme of the 15th Congress generally follows the customary pattern. The subjects for discussion are grouped in five sections: way and works; locomotives and rolling stock; working; general; and light and colonial railways. Each section embraces three questions, and on each of the fifteen questions a senior officer of one of the member railway systems prepares, on behalf of the Railway Congress Association, a report co-ordinating the replies to the question concerned of railways in a group of countries. In addition, special Reporters have summarised these reports in a more condensed form as bases for discussion. Digests of the reports given in this and in future issues of this journal will show the thoroughness with which the ground has been covered by the various specialists in their subjects. Besides the discussions on the fifteen questions, delegates will have many opportunities of seeing for themselves what has been and is being done to restore and to improve the Italian State Railways, ranging from the remarkable harnessing of geothermic electric power to the new railway terminus at which they arrive in Rome. The President of the Congress Executive Committee is Monsieur F. Delory, Director-General of the Belgian National Railways; and Members

include Lord Hurcomb, Chairman of the British Transport Commission, and Sir Gilmour Jenkins, Permanent Secretary to the Ministry of Transport. Sir Eustace Missenden, Chairman, and other Members of the Railway Executive, are Members of the Permanent Commission of the Congress Association.

The International Railway Congress Association, under whose auspices the 15th Congress and its predecessors have been organised at fairly regular intervals since 1885, is *sui generis* as the only world-wide body concerned specifically with railways. The United Nations Organisation, it is true, embraces rail transport in its regional economic organisations, but there is no treatment of railway questions on a world basis. Again, there being no world railway system, there is no functional world railway body corresponding to the Universal Postal Union. Railways, in fact, are largely regional in character, which explains why the many international railway organisations, both Governmental and non-Governmental, which do exist, are regional in character, or restricted, for instance, to standard-gauge railways. Some of these, such as the International Union of Railways (U.I.C.), which embraces almost all the railways of Europe, North Africa, and the Near East), and the Association of American Railroads, are highly-organised bodies and comprehensive in their scope. The Railway Congress Association is open to all but the very smallest railway undertakings, and its reports, which cover every part of the world, are designed to place facts before its members. Matters discussed at the sessions may give rise to recommendations which are left to railway administrations and Governments to adopt or not, as they think fit. It is this (in the best sense of the word) academic quality of the reports and discussions, and the exchange of views on all manner of railway topics, which make them so valuable for all railwaymen.

### Second Year of State Transport

AS was forecast in evidence given before the Transport Tribunal earlier this year a deficit of £20,800,000 is shown in the accounts of the British Transport Commission published on September 21. This compares with a deficit of £4,732,824 last year. There are indications of improved efficiency in carrying operations and certain economies have been achieved in the face of rising costs. Indeed, increased wages and prices of materials during 1949 lifted B.T.C. expenditure by some £11,000,000, while concessions to the staff granted in the period under review will cost £2,200,000 in a full year. This followed a wage increase of £9,000,000 in 1948. At the same time staff and other economies attained on the railways in 1949 amounted to £6,500,000 to be set against the effect of higher wages and prices (£7,600,000) and the cost of increased engine and wagon mileage and net ton-miles carried (£1,200,000). The net increase in railway expenditure, which it is noted accounts for about 64 per cent. of the total working costs of the B.T.C., was thus kept down to £3,000,000 or only 1 per cent. over 1948. This was less than the percentage increase in the train-miles. Railway staff at 624,528 was reduced by 23,151, total saving on staff wages, including economy in the use of overtime, being roughly £4,900,000. About £1,000,000 was saved in compensation for goods lost and damaged, and £600,000 by economy in coal consumption, though the increased price of coal represented an extra cost of roughly £1,000,000. The net effect was an actual decrease in train operating costs.

There was, however, marked decline in the receipts of the carrying services in 1949, as compared with 1948, chiefly due to a fall of £10,600,000 on British Railways and £1,000,000 on London Transport. "The volume of Government sponsored travel showed a marked reduction from the abnormal levels of earlier years," states the report, "and the private passenger had become unwilling, where he could avoid it, to pay for railway travel at tariffs which, though nominally only 55 per cent. over pre-war, in fact did not offer many of the customary reduced fare facilities of pre-war days. It was necessary to introduce improvements in service and concessions in fares, and, while the



response to these was not all that had been hoped, the net revenues from the railway passenger services would have declined still further had these steps not been taken." The proportion of receipts from concession rates rose in 1949 from 19 to 25 per cent. and resulted in an average fare per mile of about 1½d. (all classes) compared with the statutory maximum of 2½d. (third class).

While the decline in traffic receipts in 1949 was small in relation to gross revenue, yet, taken with the still smaller expenditure increase, it resulted in a deterioration in working results representing almost one-third of the central fixed charges of the undertaking. The report stresses the vulnerability of the net revenue position to relatively small changes in traffic when the level of charges cannot be speedily adjusted and when there is no general reserve to equalise fluctuations. Whereas prices continue their upward trend almost without pause the charges for the bulk of the B.T.C. transport services can be altered only after formal hearings which involve a considerable elapse of time. This disadvantage applied equally, of course, to the main-line railway companies before 1948.

After allowing for the 16½ per cent. increase in railway freight charges authorised as from May 15, 1950, a substantial deficit in 1950 is still regarded as inevitable. While full provisions have been made for depreciation, amounting in all to £24,700,000, compared with £20,800,000 in 1948, nothing was available for allocation to general or replacement reserves.

London Transport rail and road services operated in 1949 represented an addition of 4.4 million car-miles, or equivalent roughly to the increased service on the extended Central Line. Working expenses, however, increased by £1,300,000, and of this, higher wages costs accounted for £700,000. Traffic receipts of London Transport were down by nearly £1,000,000, as already stated. Docks and canals, hotels, and railway catering showed working deficits in 1949, the restaurant cars losing £500,000 before central charges, but the surpluses of £2,300,000 from commercial advertising and £1,200,000 rentals from bookstalls, shops, and so on, produced a net gain over 1948 in their category.

At the end of 1949 the headquarters staff of the British Transport Commission totalled 220. Last year it was 216 and the increase has been mainly in the Department of the Comptroller in order to cope with the extra work on the road haulage side. The road haulage fleet of the B.T.C. rose from 8,000 to almost 35,000 motor vehicles in 1949. The whole undertaking employed at the end of 1949 some 895,000 persons, or 21,693 less than last year, whose salaries and wages represented almost two-thirds of the total annual expenditure.

The organisation of the Chief Research Officer is being built up. Further consideration was given in 1949 to the organisation of certain ancillary services which any large and complex commercial undertaking must require. In the interests of efficiency and economy of manpower certain common services have been established to serve the whole undertaking. A commercial advertising service was set up, which sells and allocates advertisement space on sites and in media connected with the railways, buses, lorries, and so on. The growing requirement for films for staff education and training and for publicity purposes in this country and abroad has been provided for by the establishment of a section which will maintain close contact with the film industry. The B.T.C. has also set up a single legal service for the whole of its undertaking and the legal staffs employed by the Executives have now been transferred.

Development in 1949 included the completion of certain pre-war schemes, which had necessarily been suspended for some years, such as the opening of the Liverpool Street-Shenfield electrification and the Central Line extension to Epping, while progress was made also in replacing over-age vehicles in the London Transport bus fleet.

In most other directions, the report points out, little more has been possible than to keep pace with current maintenance and to overtake to a modest extent some of the war-time arrears. Strict Government control over the allocations of steel to the railways resulted in an allocation of 810,000 tons against estimated requirements for 1949 of about 1,000,000 tons. This reduction fell with particular

severity on the wagon-building programme and the change to the modern all-steel mineral wagon. Development is also subject to the Government control of capital investment. Despite representations by the Commission that any reduction might have serious consequences on the efficiency of the railways the approved level of railway expenditure in 1950 was reduced from £100,000,000 to £92,000,000. Some alleviation has since been obtained by the approval of a special wagon programme costing £2,700,000. So long as national needs make it necessary to control the "capital investment" of the B.T.C. little more can be done than preserve the undertaking in a reasonable working condition.

Despite these handicaps, however, the Executives have formulated programmes of further capital development. After the completion of the new Ocean Terminal at Southampton, a new Terminal for the Union-Castle Line at the same port has been approved. The B.T.C. has agreed, also, that a detailed scheme for the electrification of the London, Tilbury & Southend Section shall be prepared, the preliminary surveys of which are now in hand. The immediate problem of restoring war damage at Hull and other ports is formidable and the restrictions have prevented any large schemes of renovation. It has been possible, however, to approve a scheme for Fleetwood for lowering the entrance cill and the water passage between two docks to permit large trawlers to use the port on all tides. The Hotels Executive has surveyed all its hotels. Some are to be modernised and a few—mostly those which were closed during the war—will be converted for other purposes or sold. Modernisation of refreshment rooms and the introduction of higher standards of service continue steadily.

### London Area Fares Scheme Adopted

ON August 23, after a public inquiry lasting many weeks, reports of which have been given in previous issues, final judgment was given by the Transport Tribunal on the draft London Area (Interim) Passenger Charges Scheme submitted by the British Transport Commission pursuant to Section 76 of the Transport Act, 1947, and as a result last weekend the B.T.C. was able to announce that the scheme would come into force in an amended form as originally planned on October 1. Though an increase in revenue of £3,691,000 was estimated under the original scheme, after all the evidence had been heard, this figure was reduced by £923,094 as a result of concessions made at the request of the Tribunal in the cost of early morning travel. Giving judgment the Tribunal reduced this figure still further and the net result is a total reduction of £1,011,500 instead of the £923,094 proposed by the B.T.C. in its first amendment. Thus the scheme is estimated to yield £2,680,000 or 3.53 per cent. gross more receipts than the charges now in force.

Counsel for the London County Council submitted at the inquiry that the limitation of 4d. applied for distances from 4 to 15 miles should be applied for all distances above 15 miles in lieu of the limitation of 25 per cent. proposed. The B.T.C. had considered the adoption of the limitation of 4d. throughout the early morning railway return scale, but had rejected it as it held the view that, because practically all passenger costs varied directly with distance, there was no economic justification for a tapering scale; which it was its long-term objective to eliminate. However, despite the fact that the application of the limitation of 4d. accentuates the taper, the Tribunal considered it right, having regard to its preliminary decision, to adopt the proposal of the L.C.C. The additional burden on workmen travelling on the London, Tilbury & Southend line under the scale originally proposed was estimated at £132,000. Under the scale now determined that burden is reduced to £2,400. The Tribunal accepted the submission by the B.T.C. that shift workers' facilities could not be retained on tram and trolleybus services. With regard to the season ticket scale which has been reduced in certain cases, this has now been amended so as to remove its uneven progression above 12 miles, and no season ticket will be raised by more than 25 per cent. above its existing rate.



## A Sense of Perspective Needed

ONE of the major disabilities of a nationalised transport undertaking is that it tends to become involved in political controversy, however much it may endeavour to keep outside it. In some cases by keeping the responsible Minister acquainted with the ebb and flow of public opinion on certain aspects of the transport organisation, it may be justified. Criticism or commendation, however, should not be permitted to become so broad as to take the line that all is ill or good with the undertaking because of the act of nationalisation. There is all too often a tendency on the part of some critics of State ownership to ascribe every shortcoming of British Railways to nationalisation and to make comparisons with the past without due allowance, or even ordinary consideration, for contemporary circumstances apart from the change in ownership. It is easy, if not very intelligent, to endeavour to make political capital out of conditions which only very little thought would show are not necessarily linked directly with the changed status of the railways.

Recently *The Daily Telegraph* gave publicity to some correspondence which has passed between an organisation known as "The Fighting Fund for Freedom" and the Railway Executive. This stated that the Fund had alleged that the Railway Executive had attempted to "browbeat" it into silence on matters which it claimed to be of public interest; the Secretary of the Fund was stated to have described its aim as "to oppose totalitarianism." The Railway Executive had objected to two statements in a treatise on railways which had been published by the Fund and circulated to Members of Parliament. These statements were: "Today trains are so dirty and doubtless so full of germs that it is hardly safe to travel" and "Permanent way inspectors find that the gangers just refuse to carry out instructions for packing the track and in consequence, we now have the worst permanent way in the world instead of the best."

Although in our view it is hardly likely that such far-fetched statements could have been taken seriously by any responsible or informed person, the Fighting Fund was asked on behalf of the Railway Executive to withdraw the treatise, and omit the extracts complained of in future editions, on the ground that statements of this kind were calculated to discourage people from travelling for fear of injury to health, or to life and limb, and were thus injurious to the business of the Executive. The request, in our judgment, was essentially reasonable and to suggest that it constituted an attempt to "browbeat" the sponsors of the treatise seems to be as ridiculous as the statements which in the first place caused the complaint.

The matter itself is of small enough importance, but the implications behind it are not. From being a matter which primarily concerned the Railway Executive as operators of the railways and the Fighting Fund for Freedom, which is a relatively little known organisation, the affair has achieved a very wide prominence by reason of attention being directed to it in a national daily newspaper of high standing. That newspaper headed its article "'Browbeating' by Railways—Fighting Fund's Allegation," and there must always be the risk in such a case of an impression being created of a great transport monopoly endeavouring to stifle criticism of its working. If such a statement had been made in regard to the coaching stock or track of one of the privately-owned main-line railway companies, there can be little doubt that the board of the company concerned would have taken steps to have secured a retraction. Would that also have been considered "browbeating"?

The Railway Executive has never denied—indeed, only recently Sir Eustace Missenden, the Chairman of the Executive, drew public attention to—the very bad condition of some railway rolling stock, and on numerous occasions the need for better track maintenance has been stressed. Both matters are largely outside the control of the Executive at the present time. Government policy prevents the expenditure, which is necessary, to improve

rolling stock and track, but most certainly there is no ground for suggesting that trains are so dirty and full of germs that it is hardly safe to travel, or that the track is so bad that passengers risk their lives. There is plenty of old and dirty rolling stock in the country but there always has been. To the extent that there is more now than before the war is largely a matter of proportion. There is also in operation on British Railways a number of new coaches which for cleanliness and comfort compare more than favourably with anything on the lines before the war. The safety record of British Railways is as high and as jealously guarded at the present time as it has ever been.

In dealing with general levels of amenities and technical efficiency, it is necessary to preserve a sense of both proportion and perspective. In some ways, because of its position as a part of a statutorily established national organisation the Railway Executive is less free to deal with ill-based criticism than would be a private undertaking. If every attempt to defend itself against criticism were to be met with the charge that it was endeavouring to browbeat its critics, the result might well be a disinclination on the part of its officers to take up the cudgels on its behalf, and to let matters go by fault. That would be most undesirable from the viewpoints both of transport and the public.

## Jubilee of R.E. (Tn.) Supplementary Reserve

THE public day at Longmoor Camp, Hampshire, when the general public is able to see something of the many activities of the Transportation Branch of the Royal Engineers, took on an added interest this year, the twenty-fifth anniversary of the formation of the R.E. (Tn.) Supplementary Reserve. On Saturday, September 2—public day itself—and on the next day, there was a reunion of past and present sappers, and an account of the proceedings is given elsewhere in this issue.

Detailed accounts of the inception and development of Longmoor appeared in our issues of November 25, 1932, and July 5, 1946, and only a sketch is possible here. Although the Supplementary Reserve units did not begin annual training at Longmoor until 1925, the camp dates from 1903, when it was erected to house infantrymen returned from the South African War. Soon after, it began to grow as a railway centre and in the year 1907 a military railway was completed linking it with the L.S.W.R. line at Bordon, whence the first huts for Longmoor Camp had been moved.

The 1914-18 war necessitated a considerable expansion of the Centre, which was taken over by the Railway Operating Department. A depot was established and intensive training began. After the war the Centre was further enlarged. The Supplementary Reserve units, composed of men from the four main-line railways, came to undergo their fortnight's annual training, and from this time the training facilities began to increase greatly. The military railway was carried through to Liss, on the Portsmouth line of the Southern Railway, and another line was built for training purposes; the workshops, sheds, and yards were enlarged.

When the second world war broke out there were 4,000 Transportation officers and men—regulars and reservists—available for service. A great increase was demanded, and by September, 1942, the strength of Longmoor—some 500 in peacetime—had grown to 7,000. A total of 6,960 officers and 51,350 men was trained at Longmoor during the war, and, additionally, more than 80,000 men passed through the Centre to form drafts, or on postings.

Recruiting for the new Transportation units began in 1948, when Field-Marshal Sir William Slim became their honorary Colonel. Volunteer recruits have now been joined by national servicemen who serve for four years on the reserve after their period of service with the active army. There are at present vacancies in nearly all the specialist trades and men are also needed in the army trades of clerk, cook, and driver.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### Railway Efficiency

August 29

SIR,—I refer to Mr. Wellesley's letter in your issue of August 25. With many years service on the railway I am of the opinion that Control Office personnel could be much reduced if a simpler system were inaugurated. Railwaymen generally have not much respect for the present Control Administration.

This is only one phase of railway operation that requires economic attention. What is needed on the railways is vigorous, energetic and inspiring Christian leadership.

Yours faithfully,

R. W. LEWIS

104, Leggatts Way, Watford

### Railway Officers' Salaries

August 29

SIR,—The editorial comment on the above subject in your issue of August 11 was very illuminating, but a stationmaster now in a position rated at £550 a year in 1939, will be receiving not £900 a year, but about £700 a year. Thus allowing £10 income tax in 1939, he received £540 net, but now with about £100 income tax, and the value of the pound at 10s. 6d., his effective purchasing power has fallen from £540 in 1939 to approximately £315 in 1950, or the equivalent of what was paid for a class 2 position in 1939.

Yours faithfully,

S. M.

### Doubling and Regrading in Gippsland

June 17

SIR,—With reference to the article in *The Railway Gazette* of April 21 I enclose a photograph which may be of interest, showing an up raw brown coal train using the new cutting between Warragul and Drouin. This is to be the new up line, but at present it is being used for both up and down trains, while the former single line is being reggraded. Works just show on the left of the photograph.



In the article the experiments which were taking place with "X" class (2-8-2 type) locomotive No. 32 using pulverised brown coal as fuel, were mentioned. This locomotive is now in regular use on the Gippsland line of the Victorian Railways.

Now an "N" class locomotive (light 2-8-2 type) is to be similarly fitted with the special equipment necessary, and will carry out tests handling goods on country lines. The Victorian Railways intend building five more special transport wagons to take increased loads of brown coal dust

to the fuelling points at Yallourn and North Melbourne locomotive depots. Since "X" class No. 32 began running, the State Electricity Commission has supplied 400 tons of the special fuel.

Yours faithfully,

GUY BAKWELL

4, Stoke Avenue, Kew, E.4, Victoria

### Hastings Line Rolling Stock

September 12

SIR,—The Kent Coast lines have had the benefit of much new rolling stock in recent years, but the Hastings line has, if anything, deteriorated. It is now nearly 20 years since the special corridor stock was built for this line. This has been supplemented by some old S.E.C.R. Continental coaches, but even so some of the principal business expresses have to be made up of old S.E.C.R. non-corridor stock of a type turned off the suburban lines with electrification in the early 'twenties. The standard of comfort provided in the third class compartments is far from satisfactory, although they have the advantage of seating five-a-side against three in the corridor coaches.

It is unlikely that any standard design of British Railways will be able to run on the Hastings line because of the narrow width of the tunnels. There would therefore seem to be a good case for supplementing the present stock with a specially-designed open saloon seating four-a-side with a fairly narrow centre corridor. This confined space would not matter greatly in an open saloon with suitably-designed seats as few of the trains have restaurant car facilities, whereas the additional seating capacity would be welcome where train weights are already at maximum. The broad windows would give passengers unobstructed views of the beautiful scenery through which this line passes between Tonbridge and Hastings.

Yours faithfully,

A. R. MORDAUNT

Mavis Croft, Chipstead

### Passenger Services on West London Railway

September 8

SIR,—In your issue of September 30, 1949, you published a letter from me suggesting that the time had arrived for considering the restoration of at least some of the pre-war passenger services on the West London Railway, and indicated various ways in which Kensington Olympia Station could be linked up with existing underground services. I also referred to the impending influx of a large number of civil servants into the day population of the district.

So far as I know, neither the Railway Executive nor the London Transport Executive has done anything in the matter. Charles House, the vast new Government office block adjacent to Olympia, is completed and is already partly occupied; and work on other offices for civil servants is far advanced. There is no noticeable improvement in bus facilities to deal with the additional traffic.

I suggest that it is high time that action were taken to improve the public rail transport services in this area, by bringing in links with the London Transport services at Earls Court and Latimer Road, and with the South Region at Clapham Junction. If the old railway companies provided these services in days gone by, their successors can do so again. If the excuse is made that there is too much goods and parcels traffic to allow a passenger service to be fitted in, perhaps we may hear how a 10-min. interval service between Kensington Olympia and Earls Court is fitted in (as is in fact done for several of the Olympia shows) from about 9.30 in the morning till about 10 o'clock at night.

Yours faithfully,

W. O. SKEAT

32, Russell Road, W.14

## THE SCRAP HEAP

### Hard to Stomach

The following is an extract from a letter received recently at Euston House, London Midland Region: "I am a student at London University . . . . When I left London . . . . I purchased a third monthly return from St. Pancras to Appleby . . . ."

Evidently a medical student.

### A Near Shave

I arrived at a main-line London terminus one Sunday, badly in need of a wash and shave, but I found that there was no shaving saloon open anywhere near the station, and at last I had to get the train back 30 miles to my home and use my own razor. Should not all main-line station washrooms be provided with razors and blades and brushless shaving soap for a hire of say, 6d. to each person?—From a letter to "The Evening News."

### Royal Waiting Rooms, Windsor

The buildings at Windsor & Eton Central Station formerly used as waiting rooms by Royal travellers have been taken over as the divisional headquarters of British Railways police. The original building was presented to Queen Victoria by the G.W.R., to mark the occasion of her Diamond Jubilee, in 1897, and was extended subsequently to provide a double suite of rooms for King Edward VII and Queen Alexandra. The last occasion on which the rooms were used formally was for the funeral of King George V, in 1936, as the present King and Queen usually travel to and from Windsor by road. The sumptuous furnishings were sold by auction on September 15, by Johnstone, Evans Hall & Company, the official auctioneers to the G.W.R. for more than 90 years.

### G.N.R. (I.) Coat of Arms

The coat of arms of the Great Northern Railway Company (Ireland), whose future as a privately-owned company has recently been the subject of speculation, is a combination of the shields of the arms of Dublin, London-



derry, Enniskillen, and Belfast, with a small shield superimposed bearing the Red Hand of Ulster. From left to right these are as follows:—

**Dublin.** In the first Charter of Dublin (1173) it is stated that the city was to be colonised from Bristol, and it has been stated that the three burning castles on the arms of the city of Dublin are taken from those of the city of Bristol.

**Londonderry.** The top half are the arms of London with the Irish harp on the cross of St. George. Below is a skeleton sitting on a stone or mound of earth beside a castle. This device

is believed to be an allusion to Sir Cahir O'Doherty who destroyed Derry in 1608 and is supposed to have been starved to death in his castle at Buncrana.

**Enniskillen.** The arms of Enniskillen are a reproduction of the Castle of Enniskillen.

**Belfast.** The bell and the fast sailing ship are not a play on the name "Belfast," but are early merchants' signs that were incorporated in the town arms.

The Red Hand of Ulster on the G.N.R. (I.) crest is depicted as a left hand, whereas that on the Ulster Transport Authority is a right hand.

### Royal Border Bridge Centenary

The Royal Border Bridge, at Berwick, was officially opened by Queen Victoria on August 29, 1850. It is 2,152 ft. long and 138 ft. high, and took three years and four months to build, at a cost of £253,000. There are 28 arches, each with a span of 61 ft. 6 in., and 1,710,660 bricks, and 1,437,684 cu. ft. of masonry went into its construction. The greatest number of men employed at one time was 2,738, and the greatest number of horses, 180. *The Railway Times* of Saturday, August 3, 1850, said: "The passage of trains has hitherto been over a temporary wooden structure, but on Saturday last, July 27, the trains commenced running over one line of the permanent bridge. This partial opening has been adopted for the convenience of passengers travelling to the meetings of the Society for the Advancement of Science, which are to be held in Edinburgh in the course of a few days, and has thus completed the passage along this line by the eastern coast to Scotland." An illustration of the bridge appeared in our September 8 issue.

### Holiday Over

Leaving Kings Cross in the night-time  
Hustle and bustle and thrill,  
Though I have done it quite often  
I get a kick from it still.

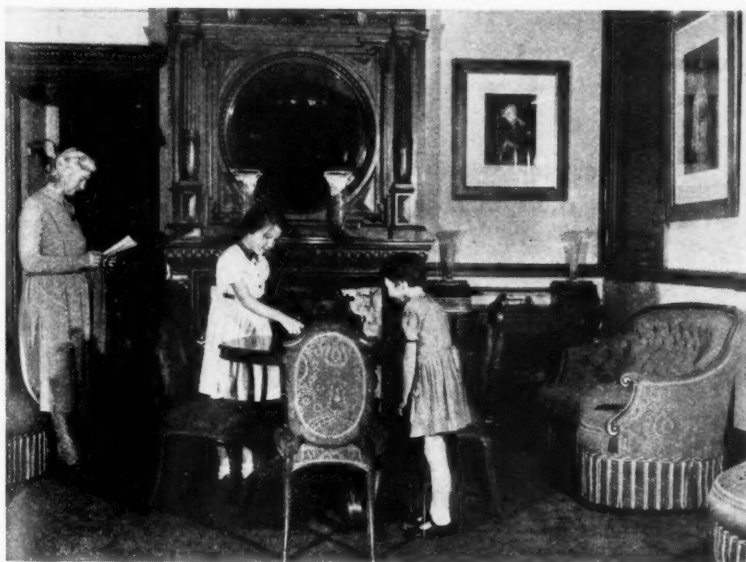
See me go up to the engine  
—Must get its number and name—  
If it has not got a nameplate  
Journey just won't be the same.

Now I lie snug in my sleeper  
Hearing the song of the wheels  
Lulling me off into dreamland;  
Drowsiness over me steals.

Grantham and York then Newcastle  
Berwick and on by the sea,  
When I wake up in the morning  
In Bonnie Scotland I'll be.

On speeds the train through the darkness  
Signals gleam bright by the track;  
I'm leaving London behind me,  
Roll on the day I'll be back.

R. M.



The Royal Waiting Room, Windsor Station, which is to be used as an office for Railway Police



## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### SOUTH AFRICA

#### Financial Situation

The working results for May, 1950, showed a further drop in earnings, the deficit for the month being £367,200, but this was considerably less than the deficit in the corresponding month last year of £780,762. The total deficit for the first two months of the current year is now £412,226, as against £812,840 for the same period last year.

Harbour and aerodrome services reflected surpluses of £153,376 and £4,369, respectively, while the combined deficit for all other services for the month amounted to £400,761. The loss on railway working alone was £299,378. The net revenue appropriation for the month was £124,084.

### RHODESIA

#### Increased Earnings

During April, the first month of their new financial year, the railways earned £848,535, an increase of £35,873 compared with the corresponding month of 1949. Expenditure totalled £690,125, giving a surplus of £158,410, or £51,150 less than in April last year.

Traffic carried compared with April, 1949, was a decrease of 13,422 passengers, mostly in African traffic. Coal and coke traffic was 171,302 tons, an increase of 20,085 tons. Mineral traffic, at 96,914 tons, was by 2,780 tons down on April, 1949, but general goods was up by 9,860 tons, making a total of 175,322 tons, and giving a grand total of 443,538 tons (27,165 tons more than in April, 1949).

#### Town Deliveries

To assist in easing congestion at Salisbury railway goods sheds and yards, Salisbury city council has set aside 19 special unloading zones in the city area, eliminating 21 parking bays for private cars. The unloading zones should ensure more speedy turnround of delivery vehicles. Each zone has been placed to serve five or six business houses. This system is regarded as temporary only.

### FRANCE

#### Transport Co-ordination Proposal

M. Edouard Bonnefous, President of the Foreign Affairs Committee of the French National Assembly and Member of the European Consultative Assembly, proposed a resolution in the Assembly at Strasbourg calling for the formation of a European transport organisation to co-ordinate transport, especially railways. The existing anarchy in European transport, said M. Bonnefous, resulted in excessive charges to transport users and in high expenditure which already weighed heavily on national budgets, and, with accelerated rearmament, would be intolerable without substantial economies which only

transport co-ordination would make possible. Further, reconsideration of the entire problem of transport and, probably, modification of its structure, were essential to any real European defence.

### ITALY

#### Position of Privately-Owned Lines

Privately-owned railways suffered much during the war, and many are still derelict. In May, 1945, 98 lines, totalling some 3,000 route-miles, had been wrecked or placed otherwise out of service. So far, only 40 per cent. of the work of restoration has been achieved with or without State aid. The State grants for the rehabilitation of private railways have proved quite inadequate; as complete restoration is considered essential, including those undertakings where temporary operation of the existing damaged system involves a heavy working subsidy, the Italian Parliament recently authorised completion of the work of restoration and modernisation, for which further and substantial State grant was voted.

### BELGIUM

#### Works at Brussels Nord Station

The work of rebuilding the Brussels termini for the new junction line across the centre of the city has reached an important stage at Brussels Nord Station where two more tracks, carrying some trains of the Liège line, are now being placed on the new higher level. The old station building, erected in 1842, has now ceased to perform a public railway function. During the next stage of reconstruction, all the public services will be transferred to provisional premises in the new building, now under construction.

### IRELAND

#### G.N.R.(I.) Pilgrimage Traffic

Now that the Lough Derg pilgrimage season is over, its effect upon the Great Northern Railway (Ireland) can be assessed. The greatest number of pilgrims travel by the G.N.R.(I.) in organised parties to Pettigo Station, whence they are conveyed by G.N.R.(I.) bus for the final five miles to the lough shore.

This year there was an increase in the number of organised parties making the pilgrimage, and the largest party ever to travel by the "Bundoran Express" left Dublin on July 1. This was organised by the Holy Ghost Fathers and over 400 pilgrims made the trip. Special arrangements were made on the return journey to enable the pilgrims to spend a few hours at the convent at Castleblayney.

The Pettigo-Lough Derg bus service was taken over by the G.N.R.(I.) in 1930 and has proved a great asset to the pilgrims. Many special trains run with pilgrims to Pettigo for the Island Sanctuary but, apart from these, the largest numbers travel by the now famous

"Bundoran Express" from the direction of Dublin. This runs non-stop in each direction between Clones and Pettigo, and thereby cuts out the Customs examinations at the boundary stations between the two points.

Of those making the pilgrimage this season over 20,000 travelled by G.N.R.(I.) rail and road services. This figure shows a marked increase over 1939, when 7,000 pilgrims travelled by this means. During the season G.N.R.(I.) buses ran some 10,000 miles, representing over 2,000 journeys, between Pettigo and Lough Derg with the pilgrims who travelled by rail. Special tickets are printed for pilgrims combining rail journey from their home station to Pettigo and bus journey to the lough.

The frequency of the bus service is arranged daily in accordance with the number of pilgrims expected at Pettigo Station.

#### C.I.E. Stockholders Final Meeting

The final meeting of the stockholders of Coras Iompair Eireann (Irish Transport Company) was held in Dublin on August 30. The company was dissolved on June 1 under the provisions of the Transport Act, 1950, when the undertaking, with the Grand Canal Company, was transferred to and vested in a new Board, also named Coras Iompair Eireann, the members of which are appointed by the Government.

Mr. T. C. Courtney, Chairman, proposing the adoption of the directors' report and statement of accounts for the first five months of this year, said that the loss for this period was £746,854, but that no conclusion as to the final result of the year's working could safely be drawn from this interim statement.

A statement of accounts based on the lines suggested by Sir James Milne in his report had, said Mr. Courtney, been prepared for the information of any stockholders who might require it.

The secretary of the Stockholders' Association, expressing dissatisfaction at the terms of compensation granted by the Government, said that they were not agreed but were dictated terms.

The report was adopted and the meeting then ended.

### WESTERN GERMANY

#### Connection with Switzerland Restored via Constance

After a break of ten years, the Swiss section of Constance passenger station was reopened on September 1. Constance Station, at the end of the German Federal Railways main line from Stuttgart via Singen, adjoins the Swiss frontier, and is 300 yd. from Kreuzlingen passenger station on the Swiss Federal Railways Romanshorn - Schaffhausen line. A shuttle service operates between Constance and Kreuzlingen, where trains connect with Romanshorn, Schaffhausen, Basle, and Zurich.

Fifteenth International Railway Congress

## Organisation of Marshalling Yards and Terminals to Reduce Costs

*Methods used in large yards in English-speaking and associated countries to reduce the cost per wagon shunted*

**Q**UESTION VII before the Fifteenth International Railway Congress Association which is being held in Rome next week, reads "Organising methods to be used in large marshalling yards and terminals, to reduce to a minimum the cost per wagon shunted. Determination of the staff and number of shunting engines needed; capacity and control of the efficiency of the marshalling yard; recording and numbertaking arrangements in the arrival and departure yards; statistics and traffic analysis by the control room; braking and retarding arrangements; the formation of trains for departure." Of the administrations to whom this question was addressed, only eight replied, and the information they gave was embodied in a report by Mr. E. W. Rosser, Operating Superintendent, Eastern & North Eastern Regions, British Railways.

### Measures to Improve Yard Output

Normal practice is for every loaded wagon to carry on each side a label showing its destination and also the route to be followed if necessary. Printed labels are provided to indicate more clearly the larger destination stations, and coloured labels or coloured stripes on white labels may be used to denote special traffics such as perishables, fruit, or explosives. Before shunting begins, the number of the siding into which each wagon is to be shunted is generally chalked on it. On most railways telegraphic or telephonic advice is sent from the departure to the receiving yard, giving the time of departure and composition of each train. More often, however, the advice includes the total number of wagons or the number in each section of a train, and indicates the position in the train of special loads such as livestock, perishables, fragile and urgent traffic. Some railways mention the numbers of the wagons and their contents.

Unfortunately, the attainment of the ideal of an even spread-over of arrivals and departures is impracticable, for in practice their times must depend on main line occupation and the availability of reasonable paths for trains. On some systems the running of freight trains during passenger traffic peak periods is prohibited. The transit time of freight traffic is also most important, and consideration has to be given to peak loading times in industry and next or early morning delivery. Moreover, a suitable balancing service to insure the efficient user of locomotives and train crews is a further aim in fixing

train departures. In the case of local trains, the times when stations are open for freight traffic have to be taken into account, and also the times when work is in progress in industry.

Arrival times should be spaced out as far as possible so as to avoid blocking yard reception lines or main lines, and departures should be arranged to provide for the regular clearance of wagons to all destinations, either in full loads to each destination yard or to an intermediate yard.

Co-ordination of the various operations in a yard is the responsibility of the yardmaster, assisted by assistant yardmasters, inspectors, and foremen. Siding accommodation is generally allocated so as to reduce to a minimum the second sorting for making trains up for despatch. It depends, however, on (a) the number of sidings available in relation to the number of destinations, (b) the capacity of individual sidings as compared with the train-load, and (c) the prompt clearance of roads when a train is made up. In most yards the allocation of sidings is permanently fixed, though a few may be used for more than one destination or for different traffics at certain times of day. Also, when there is special seasonal traffic, the fixed allocation may be varied temporarily. Directional flow of traffic and the relationship with other yards, however, make generalisation difficult. None of the administrations concerned has instituted a bonus system for the staff engaged in marshalling yards.

Only the Indian railways keep regular statistics to show the average detention to through loaded wagons; at some Indian yards the information is based on a wagon card-index rather than the wagon exchange register. Most railways, however, maintain statistics to show the number of wagons shunted per shunting-engine hour. At the principal British yards weekly statistics are prepared to show the number of wagons detached (a) per man-hour on duty of the shunting staff, but not by staff grades, and (b) per shunting-engine-hour.

### Control and Supervision

In most countries consulted, there is a yard supervisor in the yardmaster's office, who co-ordinates yard operations in the best interests of the working as a whole by means of telephonic contact with all strategic points in the yard, the district train control office, and nearby signalboxes. His duties include (1) the regulation of yard working so as to ensure that reception accommodation

is available for trains immediately on arrival, and thus prevent congestion on the main line; (2) supervision to ensure the correct formation of trains and their punctual departure; (3) planning in advance with due regard to wagons on hand and expected to arrive, and arranging for the running of extra trains when necessary to cope with abnormal traffic, or for cancelling regular booked trains owing to sub-normal traffic periods; (4) arranging for more or fewer shunting engines and staff to meet fluctuations in traffic; (5) making special arrangements for forwarding livestock, perishables, and other urgent traffic; (6) supervising the observance of wagon distribution orders; and (7) the co-ordination of yard working generally, so as to make the most economical use of shunting power and guard against undue detention of wagons.

### Staff Problems

The disposition of the staff must conform to fluctuations of traffic from day to day, whether they are regular or sporadic. In the latter case overtime may have to be worked, or in yards normally closed on Sunday, they may have to be kept open for one or more Sunday turns of duty. Seasonal fluctuations in, for instance, crops or fruit traffic, can be gauged by consulting the growers; the extra traffic is usually dealt with by the provision of additional shunting power and staff, and, sometimes, by opening sections of yards normally closed. Care has to be taken, however, to avoid providing unnecessary staff, particularly at the beginning and end of the season. Additional permanent yard staff appointments must be sanctioned in advance by the chief operating officer on the recommendation of the district operating officer; the latter satisfies himself by scrutiny of the statistics showing wagons handled and shunted per shunting-engine-hour and other information that such appointments are essential.

Only British Railways have a permanent organisation for making periodical checks to provide analyses of traffic passing through yards. Special records prepared in the Operating Superintendent's office generally cover periods of three, six or more days, and show wagon numbers, sending and receiving stations, the train and time of arrival, and the service given on departure. In fact, they indicate the efficiency of the yard working as a whole, and also provide information as to the possibility of increasing the number of through trains designed to

give the longest possible runs. In this way, the number of intermediate marshalling yards that a wagon has to enter is reduced to a minimum. These reports also enable train timings to be more closely adjusted to the actual flow of traffic, and show up the failure of a yard to despatch wagons to the correct marshalling yard, as well as delays to wagons.

### Special Workings

Most railways schedule regular trains to meet all normal requirements, thus reducing the number of special workings. Provision for additional traffic is, however, made in the working timetables by including "conditional" train schedules to be used when necessary. The timings for each "conditional" train are, therefore, fixed in advance and a path is provided for it. Apart from these considerations, arrival and departure times at marshalling yards are fixed to suit the working of those yards. Most of the administrations consulted report that the basis on which decisions to run conditional or special trains are made depends upon the stock of wagons in the yard (taken three or four times a day) and on the loads of trains *en route*. Such decisions, generally made by the district train and traffic control office, have to take into account the availability of engine power, and particularly the use of incoming engines and crews having no rostered return working. No less important is consideration of the position at the yard to which the train will proceed, and the possibility of its providing a return working for the engine and men. When necessary, Control may also divert trains from one destination to another, but the loss of return loading at the normal destination is an important consideration. The effect of special workings on engines and men requires particular attention, and normal scheduled working must be resumed as early as possible.

### Train and Yard Working Sheets

To ensure efficient and economical yard working the yardmaster and his assistants have to make a close daily scrutiny of the train and yard working sheets. Late starts and light loading of trains as well as detention of train engines and uneconomical use of shunting power primarily have to be guarded against. Vigilance is also necessary to see that wagons are efficiently braked into the sidings to avoid damage in rough-shunting, to ensure the regular clearance of reception lines, and generally to control the detail working of the yard. Senior officers are provided with statistics enabling them to compare the results of working in different yards and during different periods.

### Checking and Numbertaking

Unlike other administrations, the British Railways do not consider that the benefits derived from checking and numbertaking in marshalling yards justify the heavy cost of the staff required. However, the arrival

and departure of wagons containing livestock or other particularly important or valuable traffic is noted in most of its yards. All the other railways consulted employ staff for checking and numbertaking in some form, to suit their own particular requirements. But none employs checkers and numbertakers to prepare "cut cards" or "siding slips."

On most of these systems, the marshalling-yard staffs make no use of commercial and other documents accompanying wagons, but at tranship sheds such documents, received with wagons containing less-than-wagon-load consignments, are sorted and attached to or sent forward to the destinations of the wagons, into which the consignments are reloaded.

### Examination and Repair of Wagons

In almost all the countries concerned, both sides of wagons are inspected by wagon examiners for defects, first in the reception sidings, and again—after shunting is finished—in the sorting or departure sidings of marshalling yards. On the Pennsylvania system, however, two sets each of two men examine incoming wagons on the reception roads, and either undertake minor repairs on the spot or label more seriously defective vehicles for transfer to the "shop track" or "sick line." In the departure yards only air-brake testing is carried out before trains leave. In British flat yards also, examination is made once only, before departure. The Ceylon Government Railways alone prepare statistics showing separately the proportion of wagons requiring repairs, (a) on arrival and (b) after shunting. Combined figures in British yards vary from 1 in 400 to 1 in 41, the average being about 1 in 100. The average on the Victorian Railways is about 1 in 20, and in Ceylon it is 1 in 16 for (a) and 1 in 15 for (b).

Wagon examiners are controlled by the mechanical engineer's department and not by the yardmaster, though there is close co-operation between the latter and the examining foreman or chargehand. One or more sidings are almost invariably set aside for the light repairs of wagons, which are, therefore, not interfered with by shunting movements. This practice also avoids loss of time incurred in sending wagons to shops, and allows each wagon to continue its journey with the minimum of delay.

### Maintaining Even Flow

The most satisfactory results in terms of wagons shunted and in spreading the work so as to avoid idle periods and train detentions are obtained by securing as even a flow of incoming and outgoing trains as possible, primarily by the provision of adequate reception roads. This not only prevents congestion on the running lines, but also provides a reservoir of waiting trains for the staff to draw on, when they would otherwise be idle due to irregularities in arrivals. It is also desirable to clear the yard of trains as they are made up

ready for departure. To this end adequate departure roads should be provided to guard against delays caused by pathing difficulties or temporary non-availability of motive power. It is also important that the main sorting sidings should be of adequate length, including a reserve to meet contingencies. Slack intervals can be utilised by correcting wrong shunts, closing up roads, and carrying out second sorting to save time required for this work later on.

### Urgent Wagons

All administrations consulted provide for the special handling and disposal of urgent wagons. It is often found advantageous to marshal them next the engine, which, on arrival, can then take them forward immediately to their point of transfer in the departure yard, without their having to await their turn and go over the hump. Particulars of urgent wagons are sent on in advance from yard to yard. Such wagons, however, often cause late starting of trains with which connections have to be made, but the volume of this particular traffic is reported to be relatively small, and so its effect on yard working as a whole is not generally serious.

The extent of interruptions to shunting caused by correcting wrong shunts, closing up wagons in sorting sidings, locomotive duties, and train departures varies considerably as between different yards, and no statistical data are available. Closing up wagons is probably the most fertile cause of such interruptions, and the complete remedy is difficult to find. An additional shunting engine is costly and not always effective. Capstans are not used by the railways consulted, and limitation of space between the tracks precludes the use of tractors. Wrong shunting can be minimised by careful attention to wagon chalking and the preparation of "cut cards," and by avoiding excessive speeds over the hump.

### Rough Shunting

To avoid rough shunting and derailments, the first essential is that the rate of shunting should be related to the gradients, curves and wagon-resistance, and to the facilities for braking. The experience and skill of the shunting staff, however, is the principal factor governing this important matter, coupled with a high degree of supervision exercised by the yardmaster and his assistants. Distinctive labels are usually provided for wagons containing fragile goods liable to damage in shunting, so as to assure special care in dealing with them.

Arrangements for correcting wrong shunts vary at different yards, but in the majority the correction is made by the shunting engine, at the sorting end of the sidings, whenever this can be done with the least interference with shunting operations. When the position of the misplaced wagon is convenient and power is available, the correction may be made at the departure end of the sorting sidings, generally



when closing up is in progress. Though no figures are available for the proportion of wrong shunts, it is very small as a rule, and in the United Kingdom varies between 1 in 2,000 and 1 in 200. Closing up is usually done by a shunting engine, but occasionally a train engine is used for this purpose.

### Braking and Retarding

In yards equipped with rail-brakes, they are located on the first three or four sections of track immediately following the crown of the hump, and sufficient pressure is exerted on the wheels by the brakes to ensure adequate spacing between the cuts and avoid overtaking due to the different running qualities of wagons. The retarders are operated from a control tower. After this initial braking, only one further braking zone is required to regulate the momentum of the wagons, usually by wagon hand-brakes but sometimes by skids. It takes place in the sorting sidings, one brakeman controlling the wagons in a section of 10 to 12 roads.

In yards without rail-brakes, the general practice is for braking to be done by the hand-brakes on each side of the wagons, the hand-levers of which can conveniently be forced down or raised while the wagon is on the move. To exert extra leverage on the brake-gear, brakemen on British Railways are provided with short stout sticks, which they insert above the brake lever and force it down by pressing on the outer end of the stick.

### Skids

The distribution of shunting staff varies according to the layout of individual yards. Similarly, the use of hand-operated skid brakes depends on conditions in different yards. The length of skid allowed is determined by the skill and experience of the staff. The procedure is to bring a wagon or cut to rest short of the preceding wagon in a siding, by placing the skid at a suitable distance away to permit of the shunt gravitating gently forward after the skid is removed, until contact is made with the preceding wagons. Actually, skids are very little used on the railways consulted, as hand-brakes are found to be more efficient and less costly in braking staff.

Apart from British yards, no particulars are available to indicate the proportion of wagons damaged or derailed in shunting, but it is said to be very small. In the United Kingdom, special records have been taken from time to time, which show great differences between yards; the lowest is 1 in 2,500 in a flat yard, and the highest is 1 in 1,000 in a gravity yard.

### Formation of Trains

The make-up of trains is embodied in the train-planning programme, and is based on experience and information derived from periodical analyses of traffic flow. The formation in each case is laid down in the working timetable or ancillary documents. These planned

arrangements, however, may be adjusted from day to day to meet fluctuating conditions. In order to expedite transit and relieve congestion at intermediate yards, many important freight trains are marshalled in sections in a pre-determined order as laid down in the marshalling instructions. Where the general traffic flow is regular, pre-arrangement produces the most efficient methods in yard working and in the use of engines and crews, not to mention the most reliable service to traders.

The "simultaneous formation" system, wherein wagons for the first portions of three or four trains are placed successively in one siding, the second portions for the same trains in another, and so on, in order to have the sections of three or four trains ready for despatch, is used only in Victoria and New Zealand. This system, it is claimed, conserves siding accommodation and reduces shunting movements to a minimum.

The brakevans of incoming trains are invariably used for outgoing services, and when the numbers of incoming and outgoing trains are equal, no adjustments are necessary. In other cases, brakevans are transferred from one yard to another as required. A siding is generally allotted to brakevans, but the methods of placing them on their trains vary in the different types of marshalling yard.

### Shunting Power

Types of shunting engine are selected in accordance with weights of trains and yard gradients. They should be able to push the heaviest trains up to the hump crest at the uniform speed to suit the rate of shunting, for which the layout and braking facilities are designed. Shunting engines should be capable of rapid acceleration and deceleration, have adequate braking (preferably on all wheels), a quick-acting reversing gear, and an unrestricted view, front and rear, from the footplate. Most administrations have designed special engines for this work in hump yards. Diesel locomotives have advantages over steam, in that they require only one engineman, and can work for periods up to a week without mechanical attention or replenishment of fuel. They also have more rapid acceleration and greater manoeuvrability, and their maintenance and fuel costs are lower. A diesel is said to be able to deal with about 25 per cent. more wagons than a steam locomotive under equivalent conditions, and in yards where work is continuous, diesels will, no doubt, gradually replace steam shunting engines. No electric shunting engines are used by any of the administrations consulted.

In yards where several steam shunting engines are used, they are generally released to go to shed every 16 or 24 hr., and are relieved by a fresh engine before they leave the yard; the reliefs are usually staggered. Alternatively, a stand-by relief engine may take over the work of each shunting

engine in turn while it is in shed. Where shunting is lighter, the engines are liberated periodically during slack periods. At Mottram gravity yard on British Railways, where shunting engines are not required, train engines have to do a little shunting work, such as removing damaged wagons or those with displaced loads, and the marshalling of urgent wagons on the front of a train. In small yards also train engines may have to perform some shunting.

### Sub-normal Traffic Periods

When there is a fall in traffic various economies are practised. The yard concerned may be entirely closed or the number of shifts reduced, alternatively, a group of subsidiary marshalling sidings may be closed, or the number of shunting engines may be reduced temporarily. Occasionally, it may be found convenient to extend the weekend closed period. Also, if there is a relief engine it may be withdrawn, or a shunting engine may be released for short periods to cover local-trip working.

The greatest savings in engines and men result from the entire closing of the yard or from closure for a complete shift. Taking the effect on transit time into account, however, reduction in the normal rate of shunting—by reducing engines and staff—affords the most reasonable solution of the problem. Part-closure of yards at week-ends has many advantages. Only in exceptional periods of very low traffics can large yards be closed entirely, but small and intermediate yards can often be closed. In the event of entire or part closure, alternative means of dealing with the traffic concerned has to be arranged, usually through adjacent yards.

**BRITISH TRADE CENTRE FOR NEW YORK.**—The recent opening in New York of the British Trade Promotion Centre marks an important step in the representation of British industry in the U.S.A. The centre is situated on Fifth Avenue at 53rd Street in the heart of New York and is being run by the British Commonwealth Chamber of Commerce in the United States. U.K. organisations which have decided to participate include the Dollar Exports Board, the Federation of British Industries, the National Union of Manufacturers, the Scottish Council (Development & Industry), and B.E.T.R.O. The main functions of the centre will be to provide assistance to British industrial organisations and individual firms on all aspects of exporting goods to the U.S.A. and to represent the views of British industry to American authorities and American business men. Another service is the provision of a number of offices available for letting on a day-to-day basis to visiting British business men. Mr. W. P. N. Edwards, Deputy Overseas Director, Federation of British Industries, and formerly head of the British Information Service in America, represented the F.B.I. at the opening ceremony. The centre has been set up on the initiative of private enterprise and is supported by contributions from private organisations and firms.

*Fifteenth International Railway Congress***Electric Traction Drives and Wear of Track***Majority approval for axle-hung motors, but varied opinions on the flexible drive*

**M**ETHODS of transmission between electric motors and driving axles, and the effect on the track of different types of bogie and motor suspension are the subject of Question VI before the Rome session of the International Railway Congress. Three classes of electric traction vehicle are considered, the wording of the question being: "Comparative study of the different types of transmission between motors and axles of electric locomotives, electric motor coaches, and diesel-electric railcars. Effect on the track of the types of bogies and systems of motor suspension."

The report compiled by Mr. W. S. Graff-Baker, Chief Mechanical Engineer (Railways), London Transport Executive, collates and summarises replies received from British Railways and London Transport, the Victorian Government Railways, the Pennsylvania Railroad, South African Railways & Harbours, the Great Indian Peninsula Railway, the Ceylon Government Railway, and the New Zealand Government Railways.

**Electric Locomotives**

The electric locomotives of these administrations include types with axle-hung and with frame-mounted motors. Only the Pennsylvania, G.I.P.R., and New Zealand Government Railways give details of locomotives with frame-mounted motors in service. A majority preference is shown for the axle-hung type as far as future development is concerned, but the G.I.P.R. considers rigidly mounted motors satisfactory for all locomotives and states its trend of design for passenger service as being towards six-axle, double-bogie types. Apparently the intention is to mount the motors rigidly in the bogie frames and employ some form of flexible drive to the axles.

Certain qualifications are made with regard to the retention of axle-hung motors by railways where they are now favoured. The Southern Region, for example, advocates a flexible drive both in locomotives and in motor coaches for speeds over 75 m.p.h. On the Pennsylvania Railroad the choice of frame-mounting or nose-suspension in a.c. locomotives has been governed largely by horsepower requirements per axle. Nose-suspension with resilient gearing is used satisfactorily in lighter types of equipment, and is favoured generally for the future because of ease of maintenance.

The S.A.R. & H. advocate nose-suspension with resilient gearing, but the New Zealand Government Railways are satisfied with a rigid drive. Maximum speeds of existing New Zealand electric locomotives are 50 m.p.h. for passenger

and 30 m.p.h. for freight trains. This administration adopted frame-mounted motors and a flexible drive in ten 1-Do-2 locomotives placed in service in 1929, with the intention of reducing stresses on the track and improving riding. Experience seems to have shown that maintenance costs are high and the lateral forces of the long rigid wheelbase are severe on the track. Wear on the drive is greater than with axle-hung motors. Future designs are not expected to employ frame-mounted motors because the greater length of rigid wheelbase is held to offset the advantage of lower unsprung weight.

Only three classes of locomotive with connecting rods are mentioned in the returns, two on the Pennsylvania and the jack-shaft C + C freight locomotives on the G.I.P.R. The riding of the G.I.P.R. locomotives is said to be remarkably good even at the maximum permitted speed of 35 m.p.h.

Most of the data on diesel-electric locomotives have been supplied by the Pennsylvania Railroad, which employs drive by non-resilient gears from axle-hung motors. No change in this system is contemplated. Information has been received from the London Midland Region on the running of its two main-line units, and this Region also proposes to retain the simplicity of nose-suspended motors. The riding of these locomotives is reported to be good, with no complaints from the permanent way department. The reporter considers, however, that these machines are too few in number and have been in service too short a time for any definite conclusions to be reached as to their effect on the track.

All types of diesel-electric railcars mentioned in the returns employ nose-suspension with non-resilient gearing, and there are no indications of intended departure from this system.

**Electric Motor Coaches**

All the types of electric motor coaches considered employ axle-hung motors, and mostly have a rigid gear drive. Exceptions are found on the Pennsylvania Railroad, where vehicles with spring-resilient gears are in use. Similar transmissions have been abandoned in New Zealand, where they are said to have suffered from spring fractures and to have given no apparent improvement in performance. The purpose of their adoption in motor coaches was to improve riding and avoid wear and damage to the gear teeth, but in practice there was found to be increased first cost and maintenance with no appreciable benefit. Maximum speed of these vehicles is 60 m.p.h.

On the other hand the S.A.R. & H. have obtained satisfactory results from

nose-suspended motors with resilience in the drive in all types of electric motive power units. This administration is likely to favour resilient gears of the rubber bush type for future applications.

London Transport follows the practice of most of the other reporting administrations in using axle-hung motors with non-resilient gear drive for multiple-unit trains, and defines its future policy as the search for the maximum reduction of unsprung weight consistent with minimum cost, maximum reliability, and ease of maintenance. Helical gears replaced the straight spur type from 1935 in the interests of quieter running. It is conceded that the nose-suspended motor with fixed gears is hard on the track, but it has been found that by fitting one traction motor only in each bogie, and so reducing the masses which cause lateral forces, the riding has been improved. In addition, this arrangement considerably reduces the wear on the track.

The effect of track wear on the riding of motor coaches, in the opinion of London Transport, is accentuated by small wheels, short wheelbase, unsprung weight, lateral play, and loss of coning of wheels. A short wheelbase bogie is considered to be more prone to hunting. In the latest designs the side springs are longer than previously to increase absorption of road shock, and the maximum possible distance is allowed between bolster side springs to give greater car stability.

Types of bogie under construction for London Transport comprise one with flexible drive and two with Dean (bolsterless) suspension.

**Track Wear**

Some detailed comments on the riding of electric locomotives and its effect on the track are furnished by the S.A.R. & H. The hunting on straight track of the Class "3E" machines has been severe enough to kink the track and produce noticeable side wear on the rails at intervals of 50-60 ft. Tests of lateral forces on straight track exerted by a "3E" locomotive while hunting showed a maximum flange pressure of about 16 tons at 60 m.p.h., and it is probable that a single bogie was exerting about 40 tons of side pressure on the track at this speed.

Corrugation on sharp curves in Natal is considered to be accentuated by the regenerative operation of electric locomotives, which may cause excessive side forces on the rail heads and considerable relative differences between the deflections over sleepers and intermediately, thus producing surface

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*Fifteenth International Railway Congress***Maintenance and Repair of Rolling Stock***A report on the problem of increasing mileage between repairs*

**P**ossible improvements to rolling stock with a view to increasing mileages between repairs, the use of solid wheels and their behaviour in service, design of axleboxes and springs, and the specification of bearing to metals are the object of the summary by Mr. E. Pugson, Chief Officer (Carriage & Wagon Construction and Maintenance), Railway Executive, British Railways, and Mr. L. Lynes, Technical Assistant (Carriages & Wagons), Southern Region, British Railways, of the replies to Question V received from British Railways, London Transport, the Victorian Railways, the Ceylon, New Zealand and Indian Government Railways, South African Railways & Harbours, the Sudan Railways and the Pennsylvania Railroad. The replies indicate that as regards steam locomotives, physical condition is the main criterion for the shopping of locomotives. The mileage obtained between repairs has not been indicated by all administrations, but, from available figures, mileages between periodic repairs do not differ greatly, as is instanced by the mileages between repairs obtained in India and on the Pennsylvania Railroad, the former varying from 100,000 to 150,000 miles, depending principally on the condition of the boiler, while the Pennsylvania Railroad obtain 100,000 miles on freight locomotives and 125,000-150,000 miles on passenger locomotives.

Operating conditions vary considerably. It is, for instance, presumably due to desert sand combined with high winds that the Sudan Railways find it necessary to re-profile tyres after 10,000 miles running, although they have carried out extensive tests with wear-resisting tyres of 70 tons tensile steel.

**Hard Wearing Materials**

Some administrations are also paying increased attention to the maintenance of rolling stock and incorporation in new designs of materials which have shown themselves to be especially satisfactory in service. Where possible, existing stock is also modified to incorporate such materials where a reduction in maintenance costs can be anticipated and financially justified. The view of the majority of administrations is that it has been found possible to increase modern rolling stock mileages; the fitting of manganese steel liners to axle boxes and horn-guides has shown good results in the case of British Railways.

For electric stock the mileages between repairs on London Transport railways have increased from 100,000 miles in 1933 to 200,000 miles; a similar figure is obtained on the electric locomotives and multiple units of the New Zealand Government Railways.

Most railways have made use of solid

rolled wheels and the range covers all phases of rolling stock. Against the advantages claimed, *i.e.*, saving of weight, avoidance of loose tyres and lower costs, reports show that there are considerations which affect the indiscriminate wheels of this type and in this respect the working conditions would appear to have considerable influence. It would appear to be advantageous to use solid wheels on account of lower first cost. The use of power brakes on wagons and higher speed services may be expected to reduce the anticipated life of such wheels with consequent earlier replacement. In such a case there may not be much difference in the real cost of the solid versus the tired wheel, and this question is receiving the attention of British Railways. No speed limitations have been thought necessary for solid wheels and in respect of braking, providing cast-iron brake shoes are used, their performance is satisfactory. The physical characteristics for solid wheels are fairly uniform and this remark also applies to the chemical analysis.

The London Midland Region claims economic advantages in the re-profiling of tyres by depositing metal at the root of the wheel flanges.

Regarding tired wheels, the quality of steel used by railways is broadly similar for specific purposes and is chosen presumably to achieve the mileage between repairs: heat-treatment of tyres is under manufacturers' control.

**Roller Bearings**

Considerable experience has been gained with the use of roller bearings by railways, and reporting railways indicate appreciable savings in maintenance costs, one exception being the Sudan Railways, apparently due to the abnormal operating conditions with which they contend. The London Midland Region anticipates that maintenance, inspection, and lubrication of roller-bearing axleboxes will cost approximately £10 per axle per 1,000,000 miles, while the failure rate on London Transport stock of roller-bearing axleboxes in service over the last 10 years, causing a delay of 2 mins. or more is 0.00046 per 100,000 miles per box/year, while the annual maintenance cost is estimated to be 4.24s. per roller bearing against 36.9s. per journal bearing.

The New Zealand Government Railways report occasional failures only on steam locomotives due to fractures of rollers or races, while electric locomotives and multiple units go from overhaul to overhaul. The S.A.R. & H. report boxes on 10 per cent. of the self-aligning barrel roller-bearings, mainly due to the poor quality of lubricants. Alternatively tapered roller bearing hot boxes

amount to  $\frac{1}{2}$  per cent. of the total number in service.

The analysis of anti-friction metals indicates there is no decided preference to use an alloy with a rich tin content except for locomotives; and special high-speed coaching stock. Replies from administrations indicate the general appreciation of the need for careful preparation of the bearings before turning, pouring temperatures of the alloy and other operations.

British Railways were compelled through the shortage of tin and lead during the war to reduce the thickness of white metal linings for carriage and wagon bearings; the results were satisfactory and the practice still continues.

**Electric Traction Drives and Wear of Track**

*(Concluded from page 304)*

wheel slip. It is expected, however, that some corrugation would take place under heavy traffic even in the absence of electric locomotives.

The S.A.R. & H. also report a noticeable tendency for articulated bogie locomotives to be very severe on curves. Epidemic failures of 80-lb. rails occurred when the "IE" class was introduced in Natal, and were traced to severe lateral forces exerted by the wheels on the side of the rail heads. Tests showed the deflections under a "IE" class machine to be some 40 per cent. greater than those set up by a steam locomotive. Increasing the play in the articulated joint reduced the side forces, with benefit to the track, but tyre wear increased by as much as 40 per cent.

**Lateral Force Measurements**

Details are given of lateral force measurements carried out by the Pennsylvania Railroad; and of comparative tests between multiple-unit trains and steam locomotives to show dynamic load at rail joints on the Southern Region. In general it was found out in the S.R. experiments that the maximum contact pressures applied by motor bogie wheels averaged 10 per cent. higher than those applied by steam locomotive wheels.

The Pennsylvania trials showed improvement in the running qualities of modern electric locomotives over earlier designs, and established the efficacy of bolsters with lateral resistance, or spring-coupled lateral restraint devices between bogie and frame. A combination of these methods, associated with altered equalisation, enabled the speed of one locomotive to be raised by about 20 m.p.h. for the same lateral blow on the track.



*Fifteenth International Railway Congress***Bridges and Other Railway Structures***A digest of replies on modern tendencies in bridge building received from member administrations*

**T**HE report by Mr. A. Dean, Chief Officer, Engineering (Works), the Railway Executive, embodies replies to Question I of the International Railway Congress Association received from British Railways, London Transport, the Pennsylvania Railroad, the Government of India Railway Board, the Nizam's State Railway, South African Railways & Harbours, the Sudan Railways and the Victorian Railways.

The standard loading of bridges in the countries concerned includes the standard train loading, basis for impact allowance, wind loading, braking and traction forces, and lateral forces other than centrifugal force. On some railways dynamic effects are computed from formulae, but the effect of hammer blow is assessed by British, South African and Victorian railways as an equivalent uniformly distributed load, in accordance with the report of the Bridge Stress Committee, 1928. In India different standards of loading for both 5 ft. 6 in. and metre gauges are laid down for four classes of line, heavy mineral, main line, branch line and light line.

**Maintenance Costs**

In selecting material to be used for bridges all countries take into account not only first cost and provision for subsequent renewal, but also estimated maintenance expenditure. These costs are dictated largely by the availability of materials locally and also by climatic conditions. Such considerations as the available construction depth for spans often limits choice, and aesthetic appearance is also of importance especially in urban areas.

Fatigue effect in materials is dealt with as affecting permissible working stresses in the design of both metal and concrete bridges. All the administrations take fatigue into consideration, and where members of girders are liable to be subject to alternating tension and compression stresses, the sum of the greater total stresses together with half the lesser reverse stresses is allowed for.

**Underbridges with Metal Main Girders**

For spans up to about 100 ft. in length, plate main girders are usually the most economical and satisfactory, due to their freedom from development of defects in service and economy in maintenance. Facilities for transport from works to site may, however, limit choice; generally a depth of load of about 12 ft. 6 in. is about the maximum that can be carried. The maximum ratio of length to depth of span varies from 10 to 1 in India to 15 to 1 on the Pennsylvania system, which

avoids the use of lattice girders. Other railways design Pratt- or N-type lattice girders when spans are too great for plate girders. Where deck-type construction is possible, the tendency is towards separate spans for each track in a double-line bridge, but for other types of span most railways prefer double-track bridges unless they are on a severe skew, where two single-track spans may sometimes be considered preferable.

**Electric Welding**

On British and Indian railways welded plate-girder bridges are in service; site joints were, however, usually riveted. A welded bridge constructed by London Transport in 1937 has proved completely successful, and one of those on British Railways has welded site-joints. No trouble has been experienced with 40-ft. welded spans in India. No special rolled sections have so far been used for welding work, simple plates only having been welded; welding is considered satisfactory for metal up to 3 in. thick. India alone has so far adopted welding for lattice-girder bridges in spans 150 ft. in length; site-joints were riveted.

Simple or continuous beam types of bridge are generally used for normal spans, but special designs are adopted where necessary, and one is the subject of an editorial note in this issue. Arches are favoured wherever suitable in India.

Mild steel is still the most common material in railway underbridges, and usually has a tensile strength of from 62,000 to 74,000 lb. per sq. in., and a minimum yield point of about 33,000 lb. per sq. in. In certain instances silicon steel has been used on the Pennsylvania system, and high-tensile steel by the Indian Railway Board. No light-weight alloy designs are so far in service, but they are contemplated in India for long-span underbridges. Decisions regarding their adoption will in all cases be governed by the cost of the alloy. The use of steel main girders with concrete decking is common practice.

Plain sliding bearings are fitted to spans up to 70 ft. on the Victorian and Pennsylvania lines, and up to 100 ft. in India. Larger spans are generally provided with rocker bearings, those at the expansion end of the span mounted on rollers. Short thick bearing plates seated on bed castings or built-up steel stools are now widely used in the United Kingdom for spans of from 30 to 70 ft. Sliding rail joints are not to be found even on long spans except in India, where scarf or mitred joints are laid when intermediate rail-joints are welded.

All administrations favour the use of cross timbers (bridge sleepers) for carrying the rails where ballasted track is not possible, longitudinal timbers are less easily maintained. Long continuous stringers resting on cross girders are considered to be the most economical means of supporting the sleepers. The added rigidity obtained by fitting the stringers into the cross girders is, however, often justified, and it will also reduce construction depth. So far welding has been little used to secure the stringers to the cross girders.

The various administrations differ on the relations between recorded actual dynamic increments of stress in floor members under live loading and the value derived from formulae used in design, but actual values are generally the lower. Rail-joints on bridges are not welded as a rule, but have been found effective under intensive multiple-unit electric traction on British Railways. The provision of guard- or check-rails on bridges is general, and the fitting of re-railing ramps in combination with them has proved effective.

**Metal Bridges with Concrete Decks**

About half the administrations report the use of this combination. The advantages claimed are suitability for ballasted track, ease of erection, elimination of fire risk and noise, and lessened maintenance. A standard type of concrete decking embodying rails has been adopted in Victoria, but steel-trough decking is preferred in South Africa on grounds of light weight and cost.

Most railways consider that concrete decking should be waterproofed to prevent dripping on to steelwork or roadways below. Check rails are laid as on other bridges.

Though the general form of metal underbridges is likely to remain unchanged, probable future developments include a wider use of concrete decking and ballast and of welding, also a possible increase in the adoption of special steels suitable for welding and of light-weight alloys.

**Masonry Underbridges**

If conditions are suitable most administrations use masonry arches for spans up to 30 or 40 ft. For those over about 30 ft. it is generally considered desirable (a) to give special consideration to the shape and to varying the thickness of masonry in the arch; and (b) to provide long-span arches with hinges.

Apart from availability, the selection of materials for arch structures depends upon whether the number of similar arches to be built justifies the provision of special forms. Exposed surfaces do

not generally receive special treatment except on aesthetic grounds, but if they are of concrete, the shuttering requires special attention and surfaces usually need rubbing down. The Pennsylvania and Indian railways sometimes face concrete arches with block masonry, and have experienced no trouble due to the different elastic moduli of the facing and mass materials. A type of reinforced concrete culvert embodying an invert is standardised by the Nizam's State Railway.

#### Materials and Longitudinal Joints

Typical mixes for concrete archwork are: arches, 1:1½:3; spandril walls, 1:2:4; and backing, 1:3:6. Vibration of the concrete is considered desirable. Few administrations except the Nizam's State Railway use natural stone for masonry bridges, and none has used expanding cement.

Where double-line masonry bridges are built in two sections (one for each track) and one is completed before the other, it is generally considered advisable to keep the two sections separate, but the Nizam's State Railway bonds the two together.

Indian and South African railways assume a reduction in the dynamic effect of the live load on masonry arches according to the depth of fill and ballast beneath the track, but the Pennsylvania and British administrations apply the same basis as for metal bridges. More concrete arch bridges are envisaged and, where suitable, rigid-frame structures are now preferred by the Indian railways.

#### Reinforced Concrete Underbridges

Reinforced concrete underbridges are likely to be built in larger numbers in South Africa in future, and at present cellular-slab construction embodying metal or concrete pipes is on trial. Elsewhere future policy will probably depend on the development and economies resulting from use of pre-stressed concrete.

The type most generally favoured comprises steel girders encased in concrete, especially where construction depth is limited. In India and South Africa the lengths of such spans are at present limited to 15 ft. and 20 ft. respectively, but in the latter country 45 ft. is considered to be the economical limit.

On the British and Pennsylvania lines there are spans up to 36 ft. and 50 ft. respectively. On these and also on Indian lines the metal beams are designed to carry the full load, but in South Africa composite action is the basis for design, insured in some instances by bolting rails across the tops of the beams. The width of slab over which the live load is considered to be distributed varies from 10 ft. to 13 ft., and the dynamic increment provided for in the design is equal to that for metal bridges. The spacing of the beams and the transverse reinforcement varies considerably on different systems, as do other construction details; waterproofing is not usually provided.

For some short and medium spans, especially where depth is limited, this type of bridge is considered most useful and economical. When pre-cast units are adopted to replace existing bridges, the work can be carried out rapidly and with a minimum interference with traffic.

#### Road Bridges and Overbridges

Wherever possible, concrete construction is preferred for overbridges on British and South African railways, but the Victorian Railways administration finds steel-beam structures more economical. British Railways now have in service shallow pre-stressed concrete I-beams with bottom flanges edge to edge throughout the complete width of the bridge, and with a concrete monolith slab deck poured *in situ*.

Long-span steel structures, sometimes welded, are common practice for foot-bridges at stations, but special steel and light alloys have not yet been used.

Mass concrete is the most generally-adopted material for piers and abutments, but thin reinforced-concrete piers and steel trestles are also used extensively. Natural stone is found only in piers and abutments on the Nizam's State and Sudan Railways.

All administrations base their designs for retaining walls on semi-empirical formulae to determine the loading from the ground retained and sliding and heaving resisted from foundations. Soil sampling and testing provide valuable preliminary information in the United Kingdom and India.

Few lines report experience of behaviour of concrete-lined tunnels. Continuous cast-iron smoke plates are sometimes used to protect concrete arch-crowns in tunnels from locomotive blast.

Corrugated iron and asbestos-cement cladding is widely used for platform roofs, usually supported by steel framing, but wood, metal and reinforced concrete are also common practice. Concrete cantilever and shell roofs are to be found in the United Kingdom. Glazing is little used except in this country. Design provides for wind-pressures of 20-30 lb. per sq. in., and suction forces are also considered.

#### Testing of Bridges

Existing bridges in service are not tested at regular intervals by any administration, but most lines test new structures and others if they show undesirable developments under traffic. Deflection tests have been carried out on concrete slabs with metal girders embedded or reinforced, to confirm the lateral distribution of live loads amongst the various units comprising the full width of the deck. Brick arches and piers in which abnormal movement has occurred have also been tested to assess their capacity and confirm their elastic behaviour. Bridges in South Africa are tested when it is proposed to run heavier engines over them. Bridge oscillators are used to determine actual vibration frequencies of bridges in addition to the more usual strain and deflection tests.

Only British Railways and the Indian Railway Board report on pre-stressed concrete, of which other administrations have no experience. The Indian method of pre-stressing depends upon end-anchorage, whereas in the United Kingdom both end-anchorage and anchorage obtained solely by the bond of the wires in the concrete are adopted. The latter has proved the more economical for simple slab units requiring the casting of very similar beams. For longer spans and *in situ* construction end-anchorage with the wires grouted in after tensioning is preferable. Cold-drawn circular 0.2-in. high-tensile steel wire is used in both countries. Its tensile strength is about 100 tons per sq. in. and the long-term working stress adopted is 50-55 tons per sq. in.

In India the concrete must have a minimum cylinder strength of 3,600 lb. per sq. in. at 28 days, and a working compressive stress of 1,500 lb. per sq. in. British Railways lay down a compressive strength of 7,500 lb. per sq. in. at 28 days, and a 2,000-lb. working compressive stress for pre-stressed bridgework. A limited tensile stress is permitted for road overbridges but not for underbridges.

On sections of its metre-gauge system the Indian Railway Board has built 40-ft. and 60-ft. pre-stressed concrete deck underbridges, the latter having a pair of pre-stressed concrete beams 6 ft. 1 in. deep, on which the track sleepers are laid direct.

In 1946 the London Midland & Scottish Railway built a viaduct consisting of four 27-ft. spans, in which the pre-stressing is transferred entirely by the bond of the wires in the concrete. British Railways Eastern Region is also using pre-stressed multiple concrete I-beams for road overbridges of up to 32 ft. span.

Other purposes for which pre-stressed concrete is being adopted are for roof beams, frameworks for locomotive shed roofs, circular foundation beams for turntable races, and—in India only—tanks. Only Portland and rapid-hardening cements have been used in both countries, where wire pre-stressing has in all cases been effected with jacks. There is general agreement that it is as yet too early to express views upon the value of pre-stressed concrete, particularly in underbridges, but appreciable economies in maintenance are expected to result from its adoption.

**HIGHER PRICES FOR DIESEL OIL.**—As a result of higher world prices the Minister of Fuel & Power has raised the maximum prices of gas (diesel) oil and derv (diesel oil road vehicles) by ½d. New maximum prices will be: Gas oil (diesel oil) in inner zone, 1s.; outer zone, 1s. 0½d.; general zone, 1s. 0½d. Derv, inner zone, 2s. 6½d.; outer zone, 2s. 7d.; general zone, 2s. 7½d. All prices relate to bulk deliveries by oil companies. The distributing companies are free to sell below the Ministry's maximum prices, and any increases in the actual selling prices will be the subject of separate announcements by the companies.

*Fifteenth International Railway Congress***Railway Safety and Signal Installations**

*An abstract of replies to questions circularised to members of the International Railway Congress, now being held in Rome*

**T**HE report of Mr. H. H. Dyer, Chief Executive Officer Engineering (Signals & Telecommunications), the Railway Executive, covers the answers from British Railways, London Transport, the Pennsylvania Railroad, the Bombay Baroda & Central India Railway, the New Zealand Government Railways, South African Railways & Harbours, and the Victorian Railways.

The first point made is that there has not been sufficient experience as yet to enable a definite preference for either the free-button panel apparatus or the interlocked lever frame to be given. The Pennsylvania Railroad gives as chief reason for continuing to instal the latter system, that the push-button systems are usually more expensive and the additional cost cannot be justified economically. The majority of the railways consulted appear to prefer electrical to mechanical locking, where such is used, with the levers or handles of the apparatus. Selection is quite commonly resorted to in order to reduce the number of levers. Where push-buttons are used, the general practice is to place them on the track diagram itself, but there are occasions at large installations where this is impossible.

The New Zealand Railways intend to adopt the separate arrangement in new work. Only a few installations (none in Great Britain) have automatic selection of routes. It is considered too early to assess the relative advantages and disadvantages of the lever frame and panel systems but some management stress what they consider the greater simplicity of the lever system and the disadvantage of having so many relays as the panel systems necessitate.

**Maintenance**

Regarding maintenance, the general opinion is that greater technical knowledge is not required for dealing with panel apparatus, but such systems differ from place to place, whereas interlocked lever systems are fundamentally the same wherever they may be, only differing in detail from one signal box to another. Proper training of the staff ensures that panel equipment is adequately maintained. The prime costs of the two systems are found to be practically the same but the number of relays needing periodical overhaul is greater with panels.

Breakdowns in a route-setting system are held by the New Zealand Railways to have greater repercussions on traffic operation than they do with an interlocked lever system. A point often overlooked is that with the latter it is possible to continue to operate safely if the levers can be moved, because the interlocking gives a certain security, but

with relay systems and free push-buttons this cannot be done; special precautions are necessary, which can cause additional delays to traffic. This disadvantage of panel systems is noticeable in the case of defects arising at facing points where with panels no relaxation regarding clipping of point tongues can be permitted, as it can be in many cases with interlocked levers.

**Point Apparatus**

Electro-pneumatic point apparatus is a little quicker in working than purely electric, but otherwise there is not much to choose between the two from an operating point of view. Sometimes the small size of electro-pneumatic point equipment brings some advantages. The Pennsylvania Railroad definitely prefers electro-pneumatic working, considering it to be more economical, faster, more reliable and robust.

Remote control of points has not been used to any great extent apart from the American railways, but other lines possess examples of remote control of junctions and crossing loops. The C.T.C. remote control has replaced manual block, electric staff, tablet, etc., systems or, in the U.S.A., the train order system. It has been adopted in order to effect economy, speed up operation, and increase safety where points formerly were hand operated.

Coded track circuits are used extensively on the American lines. The maximum length of track circuit for the permanent current type with screw fastenings can be about 3,000 ft., but 11,000 ft. has been worked with coded current. Train shunts of several Ohms can be obtained in some circumstances, while in others the value may fall to less than 1 Ohm. The minimum figure allowed in Great Britain is 0.5 Ohm, except for a.c. impedance bond track circuits, where it may fall to 0.3 Ohm. Longer lengths can be worked by coded current, with greater security against extraneous interference. Line wires can be reduced, but this advantage is not so noticeable in Great Britain with the simple signalling system used there.

**Route Indicators**

Two schools of thought exist on the question of giving speed or direction indications at junctions. Some lines signal only the speed which must not be exceeded and others indicate the direction to be taken by means of position light junction indicators. The advantages claimed for the latter method are that a clearer indication is given to driver of the route he is to take and this enables him to judge how to control his speed through the junction. The report lists several codes of signal aspects now

in force, including the position light signal system of the Pennsylvania.

Railways using speed aspects do not consider the absence of any positive indication of direction to be a drawback, as in most cases where junctions consist of a main and a branch connection the direction can be inferred from the speed indications. Railways using direction indications feel that if a junction were set for a wrong route and the driver unaware of it he would naturally proceed along such route; delay would then result. Most lines appear to use both ordinary multiple-aspect and searchlight type signals. The claims made for the Pennsylvania position light signal are that it is the most efficient in fog or bad weather, provides the prescribed code of aspects with the minimum number of working units and eliminates the possibility of mistakes regarding colour. It is the almost universal practice to provide some sort of close-up indication. The power used in electric signal lamps varies. Various arrangements are in use for providing dispersal of the signal light-beam where curves are met with or in station yards.

In Britain, the lighting of single-filament lamps is proved by means of a series relay but double-filament lamps are not proved. With junction indicators a sufficient number of lamps is proved to be alight before the main signal can show "proceed." The only management covered by the report which uses flashing lights is the Pennsylvania Railroad, for "train order" signals. Reliance is placed on rigid specifications for the red and yellow lenses to prevent the chance of confusion between the colours on the part of the drivers. The general intention of all the lines dealt with by Mr. Dyer is to use light signalling systematically in future on electrified lines. The South African Railways consider it almost essential on multi-track sections, but use semaphores on their double line sections.

**Position of Signals**

It is not the practice to fix signals to the overhead traction standards where it can be avoided except on the Pennsylvania Railroad, although where space prevents using separate posts these structures are made use of. Independent posts are also generally regarded as cheaper and giving better sighting of signals.

None of the railways covered by the report uses special signalling for wrong line movements to enable overhead line maintenance to be carried out, but in some cases tracks are fully signalled for regular movements in either direction, as required.



## The Assam Rail Link Construction

(See also editorial note on page 294)

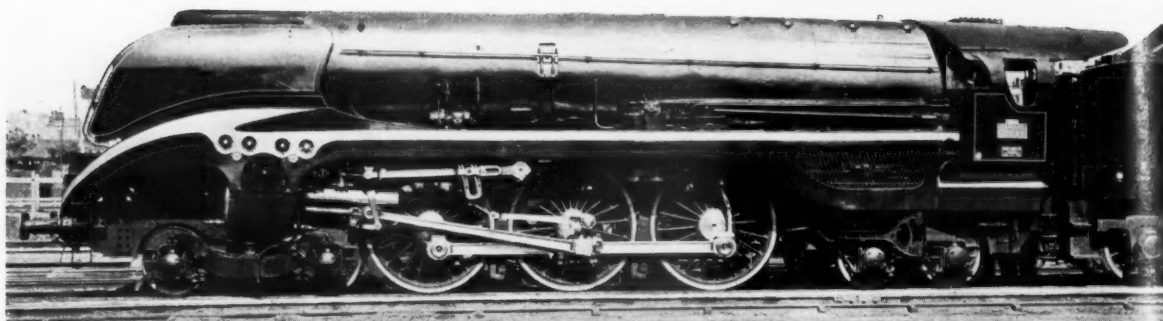


Some of the first prestressed concrete girder bridges in India were built on the Assam Rail Link. The Balasan River bridge consists of seven prestressed concrete spans each 60 ft. in length

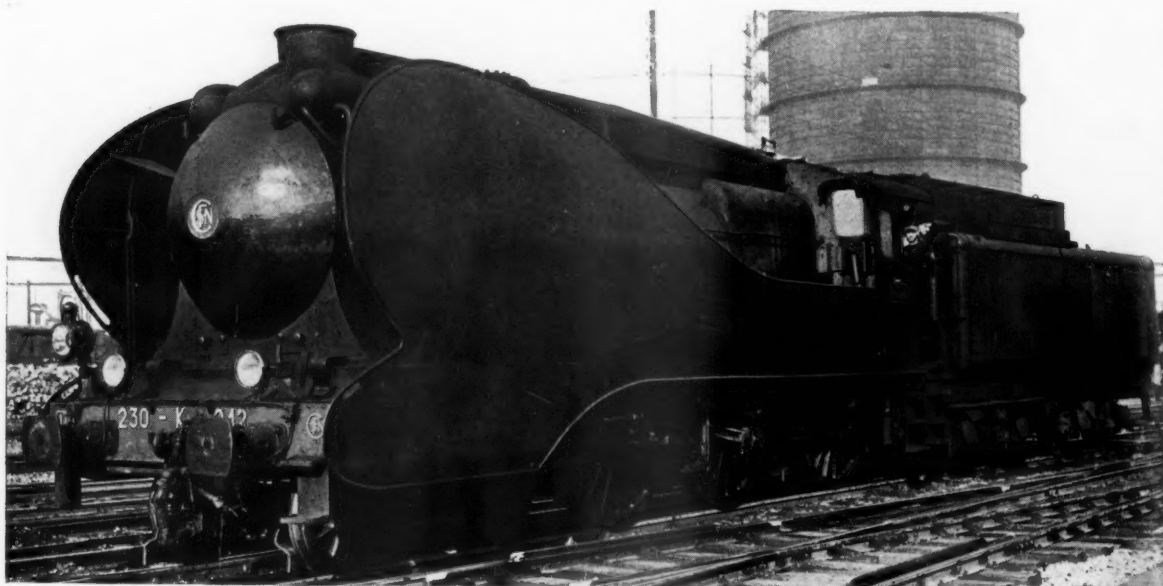


The first two-hinge rigid concrete arch bridge in India. Road under bridge with a 44-ft. span on a 48-deg. skew erected near Rongdong

## French Railway Motive Power



*The latest Region du Nord 4-6-4 four-cylinder compound locomotive weighing 127 tons. One of these engines recently hauled a 600-ton train up 1 in 200 at 73 m.p.h. when it exerted 2,550 d.b.h.p.*



*4-6-0 engine of the Region de l'Est. Though it was intended to use this engine to haul the rubber-tyre express between Paris and Strasbourg a 4-6-2 engine was necessary*



*A slow passenger train on the Region du Sud-Est, with wagons at the tail, in charge of one of the 120-ton 2-10-2 freight engines which have one section of "inside" coupling rods*

*Photos]*

*[G. F. Fenino*

## RAILWAY NEWS SECTION

## PERSONAL

Mr. George Morton, C.B.E., Chief Financial Officer of the Railway Executive, is retiring on October 31.

Mr. J. A. Addington, M.A., District Traffic Superintendent, East African Railways & Harbours, has been appointed Assistant Superintendent (Operating).

Mr. J. P. Elliott, Secretary & Chief Accountant of Davey Paxman & Co. Ltd., Colchester, has been appointed a Director of the company.

Mr. J. W. Innes, Assistant to the Chief Draughtsman, Carriage & Wagon Engineer's Department, British Railways, Western Region, Swindon, has been appointed Chief Draughtsman in that Department.

We regret to record the death on August 29 at the age of 81, of Sir Henry Drayton, who was Chief Railway Commissioner for Canada from 1912 to 1919. In 1915 he was knighted, and subsequently appointed a member of the Commission of Inquiry to report on the whole of the transport system of Canada. Sir Henry was Dominion Finance Minister in 1920 and 1921.

Mr. Lyster Robinson, Press Officer of the Travel Association since 1946, and subsequently of the British Travel & Holidays Association (into which the former body was merged on April 1, 1950), is to retire on November 30. Mr. T. W. Bennett, Deputy Press Officer, has been appointed Press Officer in succession to Mr. Robinson.

STEEL CORPORATION  
APPOINTMENTS

The Minister of Supply on September 14 announced in the House of Commons the under-mentioned appointments to the Steel Corporation, to take effect from October 2:—Chairman, Lt.-Colonel S. J. L. Hardie, Part-time Member of the British Transport Commission, Chairman of the British Oxygen Co. Ltd., Vice-Chairman of Metal Industries Limited, and Director of Glenfield & Kennedy Limited; Deputy Chairman: Sir John Green, Director of Thomas Firth & John Brown Limited, and Chairman of the Engineering & Allied Employers' National Federation; Full-Time Members: Sir Henry Vaughan Berry, British delegate to the International Authority for the Ruhr, General Sir James Steele, Adjutant General to the Forces, and Mr. W. H. Stokes, a senior official of the Amalgamated Engineering Union; Part-Time Members: Mr. J. W. Garton, Chairman of Brown Bayley's Steel Works Limited and Managing Director of the Hoffmann Manufacturing Co. Ltd., and Mr. R. A. Maclean, Director of A. F. Stoddard & Co. Ltd. Subsequent to the Minister's statement, it has been announced that Mr. R. A. Maclean is resigning his part-time membership of the Corporation.

Signor Giovanni di Raimondo, Director-General of the Italian State Railways, who is Chairman of the Italian Executive Committee of the Fifteenth International Railway Congress opening next week in Rome, was born in 1892 and graduated in civil engineering at the Turin Polytechnic. In 1940 he was appointed Senior Controller of Military Transport in Italy, including movement by land, sea, and air. After the armistice in 1943 he was transport

version contracts for the London Passenger Transport Board, and went to Clough, Smith & Co. Ltd. in 1941; since 1945 he has been that firm's Area Engineer in the Midlands & North of England.

Sir Arthur Griffin, General Manager of the Rhodesia Railways, who has been on a visit to Great Britain, has now left the country.

The Railway Executive has appointed Mr. E. Morgan, Senior Research Engineer (Scientific Research), Derby, to the position of Assistant Director of Research, Railway Executive headquarters, as from October 1.

Mr. W. M. Codrington, Chairman of Nyasaland Railways, Limited, has been appointed a Director of the Antofagasta (Chili) & Bolivia Railway Co. Ltd.

Mr. C. Birch, Assistant to the Operating Superintendent, Edinburgh, British Railways, Scottish Region, has been appointed District Operating Superintendent, Wakefield, North Eastern Region.

Mr. C. L. G. Fairfield, M.A., A.M.I.E.E., A.M.I.Mech.E., has been appointed a Director of Mullard Equipment Limited.

Mr. L. G. Morris, M.I. Mech.E., District Motive Power Superintendent, Worcester, British Railways, Western Region, has been appointed District Motive Power Superintendent, Colwick, Eastern Region.

Mr. William Riley, European Accountant for the Canadian Pacific Railway in London since 1946, has been appointed Assistant Auditor for Agencies at the company's headquarters in Montreal. He is succeeded in London by Mr. J. Auld, previously Assistant European Accountant.

Mr. C. H. D. Read, District Motive Power Superintendent, Colwick, British Railways, Eastern Region, who, as recorded in our July 28 issue, has been appointed District Motive Power Superintendent, Newport, Western Region, joined the G.W.R. as an apprentice at Swindon Works in 1917. He took up an appointment on the Continent in 1927 as Resident Inspecting Engineer, firstly with Messrs. Everett & Harle, and afterwards with Messrs. Rendel, Palmer & Tritton. In 1932 he joined the L.M.S.R. as Chief Mechanical Inspector at Euston, to act as Liaison Officer between the Chief Mechanical Engineer's and Motive Power Departments and in 1943 he was appointed Assistant District Motive Power Superintendent at Rugby. Mr. Read was appointed Maintenance Assistant to the District Operating Manager at Crewe in 1946, and two years later he was transferred to the Eastern Region of British Railways, as District Motive Power Superintendent at Colwick.

*Signor Giovanni di Raimondo*  
Director-General of Italian State Railways, who is  
Chairman, Italian Executive Committee,  
International Railway Congress

delegate of the Italian Government at Allied Forces' Headquarters, with the duty of establishing contact and maintaining co-operation in the reorganisation of the transport system and of initiating reconstruction of the railways in Italy in the rear of the combatant troops. On November 5, 1943, he was made Director-General of the Italian State Railways, and, a few days later, Under-Secretary of State for Communications, acting as Minister, which position he occupied until shortly before his reappointment, on July 18, 1944, as Director-General of the Italian State Railways, by the first Italian Government to be constituted since the liberation.

Mr. G. P. Goodman, M.I.E.E., is taking up an appointment with British Insulated Callender's Construction Co. Ltd., as an engineer in the traction contracts branch. Mr. Goodman joined the electrical department of the Demolition & Construction Co. Ltd., in 1936, as Assistant Resident Engineer on that company's tramway to trolleybus con-





Lt.-Colonel J. N. Peck, O.B.E., M.C., B.A.(Hon.Cantab.), A.M.I.C.E., M.Inst.T., has retired from the position of District Engineer, St. Pancras, London Midland Region.

Mr. H. A. R. Binney, an Under-Secretary of the Board of Trade, has been appointed Deputy Director of the British Standards Institution.

We regret to record the death of Mr. W. A. I. Emerson, who was District Locomotive Superintendent, Peterborough, L.N.E.R., from 1925 until his retirement in 1944.

Mr. P. G. Brookes has been appointed Chairman of Madras Electric Tramways (1904) Limited.

Mr. Wm. F. McCaw has been appointed Chief Designer to E. Boydell & Co. Ltd., manufacturers of Muir-Hill dumpers, loaders and shunting tractors.

Mr. J. W. Terry, Assistant Stores Superintendent Southern Region, British Railways, who has been Acting Stores Superintendent since January 1 of this year, has been appointed Stores Superintendent Southern Region.

Mr. F. T. Pullin has been appointed Manager and Mr. W. L. Cave Assistant Manager of RTSC Exports Limited, the company jointly formed by Richard Thomas & Baldwins Limited and the Steel Company of Wales Limited, to deal with the exports of mild steel flat rolled products (coated and uncoated) manufactured by them.

#### LONDON MIDLAND REGION APPOINTMENTS

The following appointments are announced by the London Midland Region of British Railways:—

Mr. A. G. Minty, District Motive Power Superintendent, Hull, to be District Motive Power Superintendent, Willesden.

Mr. K. L. Mallory, Assistant, Staff (Goods), Commercial Superintendent's Office, Euston, to be Staff Assistant to Commercial Superintendent, Euston.

Mr. W. Riddell, Divisional Storekeeper, Cowlairs, to be Assistant to Stores Superintendent, Euston.

Mr. R. Tildesley, Assistant, Office of Motive Power Superintendent, Euston, to be District Motive Power Superintendent, Bletchley.

Mr. F. J. Burge, Assistant to District Operating Superintendent, Gloucester, to be Assistant to District Operating Superintendent, Nottingham.

Mr. W. C. Billing, Locomotive Shedmaster, Carlisle (Kingmoor), to be Assistant District Motive Power Superintendent and Locomotive Shedmaster, Wellingborough.

Mr. G. M. Rickards, Locomotive Shedmaster, Retford, to be Assistant District Motive Power Superintendent and Locomotive Shedmaster, Chester.

Mr. P. D. Buckley, Chief Clerk & Cashier, Greenore, to be District Traffic Agent, Limerick.

We regret to record the death on September 6 of Mr. Egil Sundt, Director-General of the Norwegian State Railways since 1946. Born in 1903, he graduated at the University of Oslo and, after being called to the Oslo bar, studied banking and financial questions in Britain, France, Germany, and the U.S.A.; in 1929 he was attached to the Norwegian Ministry of Finance. Mr. Sundt was appointed Director of the Norwegian State broadcasting organisation in 1939, but withdrew from this position on the enemy occupation of Norway in 1940. From 1941 to

District of the North Eastern Division. He formed the Ryburn Transport Co. Ltd. in 1918 and joined Currie & Co. (Newcastle) Ltd. in 1933. Previous to entering the service of the Road Haulage Executive in 1949, Mr. Turner was Manager at Leeds and Sowerby Bridge for Currie & Co. Ltd.

The Railway Executive has appointed Mr. J. Kirkby Thomas, Deputy Principal, Kirkby Training College, Liverpool, to the position of Principal, Railway Executive Staff Training Schools, Darlington.

We regret to record the death, at the age of 54, of Mr. John Black, Divisional Manager for Scotland of the Dunlop Rubber Co. Ltd.

The High Commissioner for the Union of South Africa on September 7 held a reception at South Africa House to meet the Hon. P. O. Sauer, South African Minister of Transport, who has been visiting this country.

Mr. R. H. Cooke has been appointed Assistant Manager, X-ray Department, Philips Electrical Limited.

The Scottish Region of British Railways has announced that Mr. Wm. Lithgow, Mobile Group, office of the Operating Superintendent, Glasgow, has been appointed Assistant (Operating) to the District Traffic Superintendent, Ayr (located at Kilmarnock).

Mr. J. Holland, Assistant Chief Engineer (Traction), British Insulated Callender's Cables Limited, is in Warrington Royal Infirmary Private Nursing Home following an accident.

Mr. E. W. Tonge, District Traffic Superintendent, Lancaster, Road Haulage Executive, has been appointed Divisional Traffic Officer for the North Western Division. He was Liverpool Area Manager of Northern Motor Utilities Limited before taking charge of Lancaster District, Road Haulage Executive, in 1949.

Mr. W. J. Devenish, Assistant General Manager and Superintendent of the Railway Department of the British Automatic Co. Ltd., is retiring at the end of September after 41 years' service. He joined the Sweetmeat Automatic Delivery Co. Ltd., later the British Automatic Co. Ltd., at the age of 23 and for many years has been closely associated with the railway side of the company's business.

A group of four officers of the Western Australian Government Railways has left Australia by sea for a four months' visit to Great Britain and South Africa, to study modern railway developments. Members of the group, which is expected to arrive in Great Britain at the end of September, are: Messrs. J. Harrigan, Chairman of the Railway Planning Board; C. Gates, Superintendent of Operating Research and a Member of the Board; and H. White and A. E. Mayle, senior traffic officers.



*The late Mr. Egil Sundt*  
Director General of the Norwegian State  
Railways, 1946-1950

the liberation he was Managing Director of the Alliance Insurance Company of Norway. In 1945 he resumed his position as Director of Broadcasting, and in July, 1946, was appointed Director-General of the Norwegian State Railways. Mr. Sundt had been President since 1948 of the Nordiska Järnvägsmanntasallskapet, the association of railway officers from Norway, Sweden, Denmark, and Finland, with quadrennial meetings in one of the four countries, and in June of this year presided at the association's twenty-second conference in Oslo.

British Railways, North Eastern Region, has announced that Mr. G. B. Gray, Assistant District Goods Superintendent, Leeds, has been appointed District Passenger Superintendent, Newcastle.

Mr. Hartley Turner, formerly Group Manager of the South Leeds Group, Road Haulage Executive, has been appointed District Manager for the West Riding

# British Transport Commission Results for 1949

*Deficit of £20 million: Decrease in traffic receipts: Improved efficiency in carrying operations: Some economies effected*

The second annual report of the British Transport Commission, submitted to the Minister of Transport by the Chairman, Lord Hurcomb, shows that for the year ended December 31, 1949, despite improved efficiency in carrying operations and savings achieved by reductions in staff and other measures, the year ended in a deficit, after charges for capital redemption and special items, of about £20·8 million. In these circumstances, nothing is available for allocation to general reserve or to replacement reserve.

Price and wage levels continued to rise, while takings from passengers and general merchandise tended to fall, but these adverse movements were greatly accelerated in the later months, and by the close of the year the estimated deficit was running at the rate of well over £500,000 a week. The working results of the principal activities plus earnings from other sources resulted in a surplus of £31·3 million before central charges.

At present the general level of prices and wages is more than double pre-war, and in individual cases much more than double, but the charges now in force for carrying services are not more, on the average of all the services, than 65 per cent. above pre-war levels. In part, this differ-

ence between the level of costs and the level of charges is explained by economies and by increased efficiency of operation, but much of it is attributable to the favourable load factors at present enjoyed by the various transport systems.

Meanwhile, prices continue their upward trend almost without pause and often with little warning. In such circumstances, only the most strenuous endeavours will bring about a disappearance of the deficit on net revenue account carried forward into 1950 and amounting to the sum of £25·5 million, which is likely to be much increased by the end of that year.

## British Railways Regions

The future boundaries of the five Regions of British Railways in England and Wales were given much consideration. A number of obvious adjustments had already been made in 1948, and other changes took place in 1949, the most important of which was the transfer from the London Midland Region to the Eastern Region of the London, Tilbury & Southend lines. But these adjustments left untouched the problem of a number of areas in which two or more of the former companies had important interests, the main examples being in the Midlands, the West

Riding, and in the territory west of Exeter. After careful study the Executive prepared a detailed scheme for the allocation of these overlapping areas into specific Regions.

The opportunity was also taken during 1949 of completing the establishment of 21 operating districts in the L.M.R. in place of the 42 district control areas which were part of the operating organisation of the former L.M.S.R.

During 1949, the number of passenger journeys, apart from travel at workmen's fares and season ticket rates, was greater than that of the previous year, but receipts were considerably below the 1948 level. Receipts from H.M. Forces and their dependents decreased by over £4 million.

With a continuance of the five-day week, the revenue from workmen's and season tickets decreased slightly. There was also some small transfer of traffic to other transport and some development of housing schemes nearer places of employment. Receipts from parcels and other merchandise consigned by the public for conveyance by passenger train increased by 2 per cent. compared with 1948.

General parcels, notably textiles, showed an upward trend, and, following the larger allocation of newsprint, the revenue from

## BRITISH TRANSPORT COMMISSION: CONSOLIDATED BALANCE SHEET AT DECEMBER 31, 1949

December 31, 1948	£	£	£	December 31, 1948	£	£
46,175,731	<b>Current Liabilities</b>			24,552,959	<b>Current Assets</b>	
5,006,746	Creditors and accrued expenses ...	45,206,257		7,283,200	Bank balances, Treasury Bills and cash ...	63,659,449
9,460,394	Consideration payable in cash for undertakings acquired (estimated) ...	8,894,784		178,787,765	Tax Reserve Certificates ...	4,156,925
60,642,871	Interest (less income tax) accrued on capital liabilities ...	10,845,400		24,924,215	Marketable securities (market value £92,728,653) ...	92,120,148
44,067,569	Taxation ...	8,087,485		30,704,489	Amount due under War Damage (Public Utility Undertakings, etc.) Act, 1949	
70,067,661			73,033,926	1,259,252	Outstanding traffic accounts ...	35,075,166
114,135,230				17,418,775	Income tax recoverable (estimated) ...	10,527,492
129,373,090	<b>Deposits</b>			65,818,081	Other debtors and payments in advance	68,861,197
16,640,335	By Staff Savings Banks ...	43,797,158		350,748,736	Scores and materials ...	274,400,377
4,172,986	By Staff Superannuation Funds ...	72,147,528	115,944,686		<b>Investments in respect of British Transport Stock Redemption Fund Accounts (market value £4,849,498)</b>	5,004,506
109,754,747	<b>Provisions</b>			2,403,078	<b>Interests in Non-controlled Undertakings ...</b>	9,810,843
4,498,092	For abnormal maintenance ...	113,318,509		10,072,991	<b>Interests in Subsidiary Companies not engaged in the principal activities of the Commission ...</b>	1,222,607
264,439,250	For restoration of War Damage ...	15,781,296		2,488,046	<b>Net tangible assets employed in Road Transport where information for detailed consolidation is not available</b>	
439,217,351	For workmen's compensation and for compensation to officers and servants under the Railways Act, 1921, and the London Passenger Transport Act, 1933 ...	3,458,955		15,540,080	Road Haulage (estimated) ...	48,915,621
	For pre-vesting actuarial deficiencies of guaranteed Superannuation Funds ...	109,309,231		1,251,203	<b>Certain road passenger companies</b>	
	Internal insurance accounts ...	4,625,353	246,493,344		<b>Fixed Assets on bases indicated in supporting Statements</b>	
			435,471,956		(a) Rolling stock, vehicles, ships and plant and equipment ...	672,966,807
	<b>Interests of Outside Shareholders in subsidiary companies ...</b>		128,756		Deduct Depreciation (including £324,442,141 deemed to have accrued prior to dates of vesting or acquisition) ...	363,454,105
	<b>Capital Liabilities</b>					309,512,702
	Loan from London Electric Transport Finance Corporation Limited (repayable 1950/55) ...	40,160,040			(b) Land, buildings, permanent way, docks, canals, and other works. (Renewals of these assets are dealt with as revenue charges) ...	959,597,329
	Loan from Railway Finance Corporation Limited (part secured: repayable 1951/52) ...	27,000,000				1,269,110,031
	Obligations to Local Authorities in respect of the redemption of loans ...	1,033,422			<b>Goodwill ...</b>	48,884,184
	Liabilities to be satisfied by the issue of British Transport Stock (estimated) ...	14,693,653			<b>Discounts less premiums on issue of British Transport Stock, less amount written off ...</b>	23,825
	British Transport Stock ...	1,159,322,533	1,242,209,648		<b>Net Revenue Account—balance (deficit) at December 31, 1949 ...</b>	25,494,057
			951,250,719			1,682,866,051
	<b>Capital Redemption Accounts</b>		5,055,691			
	Note.—Estimated further expenditure on capital account authorised at December 31, 1949: £116,000,000					
	<b>HURCOMB, Chairman</b>					
	<b>J. BENSTEAD, Deputy Chairman</b>					
	<b>R. H. WILSON, Comptroller</b>					
1,659,070,319		1,682,866,051	1,659,070,319			

newspapers and periodicals increased. The dry season considerably reduced the crop of fruit and vegetables. Receipts from traffic conveyed at flat rates on behalf of Government departments were lower than in 1948 by over £½ million, or approximately 10 per cent., principally because of the reduced landings of fish.

### Freight Train Traffic

The total tonnage of general merchandise traffic was a little below that of 1948, some decline in railway carryings of higher-rated traffics being only partially offset by increased tonnages of lower-rated commodities. The gross receipts were less than in 1948 by approximately £4 million, or 4.8 per cent., of which £2 million related to Government traffic. Minerals and heavy merchandise tonnage was greater than that of 1948.

The originating tonnage of coal class traffic increased by 3.8 per cent. over 1948. For 1949, coal exports increased to 13,916,000 tons, compared with 10,505,000 tons for 1948, an increase of 32.5 per cent. The increase in coal exports, which are rail-conveyed for relatively short distances at rates below those applicable to land-sale tonnages, depressed the average yield per ton from 100.5d. in 1948 to 99.2d. in 1949. The total increase of 2.5 per cent. in coal class traffic receipts was, therefore, lower than the 3.8 per cent. increase in originating tonnage.

### Economies Effected

At December 31, 1948, the staff on the payroll of British Railways, including collection and delivery, but excluding marine, docks, and canal staff under railway control, was 648,740, and at December 31, 1949, the staff numbered 624,528, or a reduction in the year of 24,212, of which 1,061 represented transfers to other Executives.

A detailed overhaul was begun of the flows of freight traffic throughout the country, and considerable streams of traffic which had formerly passed through marshalling yards or had been transferred from one service to another at exchange points were either diverted to more favourable and direct routes or made up in through trains to avoid staging. Inter-Regional traffic particularly benefited from these arrangements, which gave substantial savings in train working costs and enabled a number of marshalling yards to be closed. Locomotives were given longer and faster runs, and fewer of them were required, the stock being reduced during the year by 388.

By means of intensive tuition to firemen on the best methods of stoking and a revision of the classification of coal according to its suitability for various services, a reduction of 1.7 per cent. was made in the coal consumption per engine-mile.

Savings were made from the introduction of co-ordinated working by absorbing into individual area schemes stations where the interests of two or more of the former railway companies were involved. A total of 607 stations are concerned. A large number of plans were prepared for the modernisation of goods terminal operation, but only a limited number could be introduced in 1949. In London, the concentration of traffic on individual goods terminals and the closing of others resulted in lower costs.

All the former main line railway companies maintained town offices in London for answering inquiries, selling tickets, or receiving parcels and goods traffic. These facilities were reviewed and proposals approved by the Executive for co-ordinating some of them are expected to reduce

### CONSOLIDATED WORKING RESULTS OF PRINCIPAL CARRYING ACTIVITIES

	Railway passenger and freight services of British Railways		Collection and delivery and other road services of British Railways		Road haulage services by British Road Services (see Note 2 below)		Road passenger services of provincial and Scottish groups		London Transport services		Ships: passenger cargo services of British Railways		Inland Waterways: carrying operations		Grand Total	
	£	Per cent.	£	Per cent.	£	Per cent.	£	Per cent.	£	Per cent.	£	Per cent.	£	Per cent.	£	Per cent.
	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948
<b>Gross receipts:</b>																
Passengers	113,943,732	36	8,620,477	50	16,959,434	45	35,511,286	56	42,204,769	57	5,694,408	40	719,384	34	211,797,435	41
Freight, parcels, and mails	207,727,638	21	6,620,477	27	9,122,722	24	7,753,133	28	4,871,258	35	1,556,036	20	152,007	19	259,974,839	21
Miscellaneous	3,797,875	16	1,035,894	6	3,412,325	9	2,333,105	8	4,737,352	12	2,797,608	35	4,537	—	583,151	20
Total	325,469,285	73	16,277,848	83	31,494,481	78	45,597,524	92	51,713,379	81	10,048,052	75	156,948	53	447,605,425	100
Per cent. of grand total—Year 1949	68		5		10		9		9		2		—		100	
Per cent. of grand total—Year 1948	73		83		78		92		81		75		53		100	
<b>Working expenses (including depreciation or renewals, but after deducting abnormal maintenance):</b>																
(a) Train, vehicle and ship operating costs	112,841,002	36	7,868,517	50	16,959,434	45	17,811,372	56	22,199,081	57	3,165,861	40	274,598	34	185,991,123	41
(b) Maintenance and depreciation of rolling stock and ships	64,704,179	21	4,251,411	27	9,122,722	24	7,753,133	28	4,737,352	12	1,556,036	20	152,007	19	97,774,443	21
(c) Other traffic costs	76,092,174	24	1,035,894	6	3,412,325	9	2,333,105	8	4,737,352	12	2,797,608	35	4,537	—	93,688,955	20
(d) Maintenance and renewal of way and structures	49,656,353	16	433,148	3	1,106,175	3	794,771	2	768,282	2	17,668	—	135,960	17	54,481,915	12
(e) Vehicle licence duties and inland waterway tolls	9,531,948	3	1,991,752	13	6,672,069	18	2,136,059	7	2,517,705	6	414,294	5	247,317	30	3,238,322	1
(f) General expenses	—	—	15,691,301	100	—	—	2,136,059	7	—	—	—	—	—	—	24,463,012	5
Deduct:																
(g) Cartage charged to other activities	—	—	3,370,968	—	—	—	—	—	—	—	—	—	—	—	459,587,770	100
Total	312,827,636	100	12,320,333	100	37,419,218	100	31,565,051	100	39,269,344	100	7,951,467	100	814,419	100	456,216,802	100
<b>Net traffic receipts</b>	12,660,809		3,699,847		1,431,721		4,257,982		2,937,230		3,113,171		85,964 (deficit)		21,388,623	
Operating ratio: percentage of working expenses to gross receipts	96		143		96		88		93		72		112		96	
<b>Year 1948</b>																
Gross receipts	336,135,396		8,666,993		14,342,620		32,484,957		42,827,687		10,328,613		519,515		460,390,672	
Working expenses	309,877,659		12,614,803		13,211,401		28,303,165		38,512,177		7,388,726		585,942		400,000,075	
Net traffic receipts	26,257,737		3,947,810 (deficit)		1,131,219		4,181,792		4,315,510		2,939,887		46,573 (deficit)		36,389,547	
Operating ratio: percentage of working expenses to gross receipts	92		146		92		87		90		72		113		92	

NOTES.—(1) The classification of working expenses under the six main heads shown above, while broadly uniform, differs to some extent for the various principal activities shown.  
(2) The road haulage figures included above are in part based on estimates.



## CONSOLIDATED WORKING RESULTS OF OTHER PRINCIPAL ACTIVITIES

	Docks, harbours and wharves	Inland Waterways : other than carrying operations	Hotels and catering			Commercial advertising	Letting of sites, shops, etc., on premises and properties in use for transport purposes	Grand total
			Hotels	Refreshment rooms	Restaurant cars			
Gross receipts ... ..	£ 11,522,386	£ 1,755,952	£ 5,347,195	£ 5,684,666	£ 2,512,244	£ 2,969,536	£ 1,392,407	£ 31,184,386
Working expenses (including depreciation or renewals but after deducting abnormal maintenance) ... ..	12,363,934	1,925,529	5,394,173	5,357,476	3,026,475	716,982	184,004	28,968,573
Net receipts ... ..	841,548 (deficit)	169,577 (deficit)	46,978 (deficit)	327,190	514,231 (deficit)	2,252,554	1,208,403	2,215,813
Year 1948								
Gross receipts ... ..	10,799,704	1,648,781	5,310,890	5,910,854	2,377,579	2,891,894	1,224,435	30,164,137
Working expenses ... ..	12,129,188	1,875,058	5,207,322	5,475,256	2,461,040	684,284	187,589	28,019,737
Net receipts ... ..	1,329,484 (deficit)	226,277 (deficit)	103,568	435,598	83,461 (deficit)	2,207,610	1,036,846	2,144,400

existing cost by some £30,000 a year. The unification of the overlapping representation of the former companies led to the reduction from 1,042 pre-war to 722 in the number of railway service representatives without impairing the efficiency of the contacts with the public.

## Closing of Branch Lines

The following is a summary of the branches and individual stations authorised in 1948 and 1949 for closing. It includes the permanent closing of branches and stations from which services were temporarily withdrawn before 1948:—

		Approximate route mileage	Estimated annual saving £
Branches closed ... ..	23	116	50,800
Branches closed for passengers ... ..	15	118	140,000
Individual stations closed for passengers and/or goods ... ..	92	—	36,300

A saving of approximately £500,000 a year is expected from a revision, introduced from October 1, 1949, of the schedule of prices governing the repair of wagons by private firms.

Despite difficulties in the supply of labour and materials, work on the Liverpool Street-Shenfield electrification was completed in September. The new services attracted a substantial increase in business, as shown by the following figures for a typical week in December last:—

Week ended	Passenger journeys (ordinary and workmen)	Receipts (ordinary, workmen, and season tickets) £
December 17, 1949 ... ..	202,400	£10,900
Increase over corresponding week of 1948 ... ..	74,500 (58.2 per cent.)	£2,700 (32.9 per cent.)

The Railway Electrification Committee (1948) met regularly throughout the year and has arranged to report in 1950.

The 1949 programme of permanent way renewals represented the complete or partial renewal of 2,000 miles of track made up as follows:—

	Miles
Complete renewals, new material ... ..	1,365
Complete renewals, secondhand rails, and new sleepers ... ..	252½
Re-railing ... ..	118½
Re-sleeping ... ..	264
	2,000½

and 1,959½ miles, or 98 per cent., were completed at the end of the year.

## Locomotives

The revised programme of new locomotives estimated to go into traffic during 1949 was 466 of which 309 were to be built in railway shops. The actual number of locomotives built in 1949 was 391, of which

301 were built in railway shops, and 90 by contractors. The balance of 75 locomotives was carried forward for construction during the early months of 1950. Plans were made for the introduction of six of the British Railways new standard types of locomotives into the building programme for 1951.

On December 31, 1948, there were 1,214 locomotives under or awaiting repair in the main works, equal to 6.1 per cent. of the operating stock of 19,757 locomotives. On December 31, 1949, the figure had been reduced to 990 locomotives, equivalent to 5.1 per cent. of the operating stock.

## Carriages

New passenger carriages to the number of 1,582 were built during the year, 1,078 in Railway Executive workshops, and 504 by private contractors; 219 non-passenger-carrying vehicles were completed. At the peak of traffic requirements during the summer months, the number of passenger-carrying vehicles under and awaiting repair was 7.5 per cent. of the book stock, as compared with 11.3 per cent. in the corresponding period of 1948. The general condition of the stock improved.

A committee on interior design and decoration, on which all interested departments are represented, was set up and is formulating recommendations on interior finish and details. A prototype coach is being built.

## Wagons

A total of 32,490 new wagons, with a total capacity of 485,000 tons, were built in 1949, 15,519 in Railway Executive workshops, and 16,971 by private contractors. At December 31, 1949, 93,074 wagons were under and awaiting repair, representing 8.4 per cent. of the book stock, compared with 9.8 per cent. a year earlier.

The average weekly numbers of wagons forwarded loaded during 1949 and the previous year were:—

Description	Weekly average			
	1949 No.	1948 No.	Inc. (+) or dec. (—) in 1949 No.	Per cent.
Merchandise and livestock ... ..	280,000	288,712	—8,712	—3.0
Minerals ... ..	113,692	111,269	+2,423	+2.2
Coal and coke ... ..	302,846	297,577	+5,269	+1.8
Total ... ..	696,538	697,558	—1,020	—0.1

During the year, 68,000 of the former privately-owned wagons, with a capacity of 696,000 tons, were withdrawn from the stock, and the great amount of material salvaged was used in repair of other vehicles of similar type. With the smaller ex-privately-owned fleet, private wagon repairers were able to repair 161,000 of the wagons owned by the former railway companies, nearly double the 1948 number,

while 231,000 repairs to former privately-owned wagons were carried out by railway staff.

In November, the railways cleared from the collieries the high average of 329,000 loaded wagons a week, and in December, 337,000 a week. Special measures, including working at weekends, were adopted to ensure adequate supplies of empty wagons.

The average wagon-load of coal class-traffic at starting point improved during the year from 10.97 tons in January to

## BRITISH RAILWAYS WORKING RESULTS, YEAR 1949

Year 1948 £		£
Gross receipts: Passenger train—		
Passengers ... ..	104,424,448	96,397,712
Ordinary ... ..	6,328,440	6,198,258
Workmen ... ..	11,836,901	11,366,762
Season ... ..		
	122,589,789	113,962,732
	22,363,659	
	6,987,237	
	151,940,685	142,973,887
Freight train—		
Merchandise ... ..	83,667,070	79,671,938
Minerals ... ..	29,245,746	29,680,869
Coal and coke ... ..	66,212,075	67,897,074
Livestock ... ..	1,391,822	1,466,802
	180,516,713	178,716,683
	3,677,998	
	336,135,396	325,488,445
Working expenses (including depreciation or renewals but after deducting abnormal maintenance)—		
Train and vehicle operating costs ... ..	113,343,442	112,841,002
Maintenance and depreciation of rolling stock ... ..	60,423,640	64,704,179
Other traffic costs ... ..	78,360,920	76,092,174
Maintenance and renewal of way and structures ... ..	48,799,664	49,658,333
General expenses ... ..	8,949,993	9,531,948
	309,877,659	312,827,636
	26,257,737	
		12,660,809

11.25 tons in December. This was due in part to an increase in the number of 16-ton wagons in use, and in part to better loading on the part of the National Coal Board. The round trip time of wagons of all types decreased from 8.34 days in January to 7.71 days in December. Terminal user time remained satisfactory and representative weekly figures for all types of wagons were:—

All stations, works, and sidings		
Week ended	1949 days	1948 days
March 25 ... ..	2.16	2.08
June 24 ... ..	2.20	2.28
September 30 ... ..	2.22	2.18
December 23 ... ..	2.16	2.19

(Continued on page 316)

## R.E. Transportation Centre

The Royal Engineers Transportation centre at Longmoor was open to the public from 1.30 to 7 p.m. on public day, Saturday, September 2. The regimental band of the 1st Battalion, Duke of Cornwall's Light Infantry, played during the afternoon and sounded Retreat, and members of the Gordon Boys School gave physical training displays during the afternoon.

The full programme, arranged by Brigadier R. Gardiner, C.B.E., Director of Transportation, and Commandant, Transportation Centre, and his Staff, included a demonstration of a special wagon which

running sheds, a cookhouse, barrack room and other buildings could be viewed. The Chichester & District Model Engineering Society contributed an exhibition of models.

The visiting press representatives were welcomed in the morning by Brigadier Gardiner, who at a conference explained the significance of the "at home" this year, which was the jubilee of the Supplementary Reserve. He said that although sufficient volunteers had come forward for the railway units, recruiting for the port and inland water transport units had been slower and they were anxious to obtain more volunteers from the many who



Royal Engineer supplementary reservists re-railing a locomotive of the Longmoor Military Railway with a 45-ton crane

may be used to form a ramp at the end of a train, re-railing a locomotive with a 45-ton crane, "end-on" platelaying, and diving displays by Port Wing personnel wearing standard and lightweight diving suits. The public was able to ride on the footplate of a 2-8-0 steam or a 650-h.p. diesel locomotive, or on the "old-fashioned" narrow-gauge line, which was patronised particularly by the children.

On view were the 57-year-old 0-4-2 tank locomotive *Gazelle*, formerly of the Shropshire & Montgomeryshire Light Railway, and now on permanent loan to the Centre by the Railway Executive, and, behind it, the 2-10-0 locomotive *Kitchener*, built in 1943 for war service. Other items of interest included parts of a special river craft for service in Burma.

The Garrison Church with its fine memorial windows and reredos, the workshops, museum, signal school, diesel and

served in Port Operating units during the war.

Brigadier Gardiner referred briefly to the Transportation Museum. As he related, he felt, when taking over command of Longmoor in 1946, that "some permanent record of our achievements should be available to coming generations of transportation Sappers." Much work has been put into this museum, which now forms one of the most interesting features of the Centre.

**KASHMIR MAIL DERAILMENT.**—Twenty persons were killed and 45 injured when the Delhi-bound Kashmir Mail was derailed near Gurdaspur, northern Punjab, recently. It is understood that the engine and three coaches plunged down an embankment when the train left the rails on a bridge over a ravine.

## Staff & Labour Matters

### Railway Wage Claims

Rejection of the separate wage claims of the three railway trades unions, of which details were given in our August 25 issue, was announced by the Railway Executive on September 15, on the ground of the financial condition of British Railways. The N.U.R. reported the rejection the same day to its executive, and the matter was referred to the N.U.R. negotiating committee.

### London Bus Dispute

London Transport bus operating crews on September 13 began an unofficial strike arising out of dissatisfaction with the failure of their union, the Transport & General Workers' Union, to press a claim with the London Transport Executive for a £1 a week wage increase, and also out of fear that engagement by the Executive of conductresses (at, however, male rates of pay) might jeopardise the wages position. The strike spread during the week, involving eventually some 16,000 employees, including trolleybus crews who joined the busmen.

At a meeting called by the T.G.W.U. executive on September 16, it was decided to end the strike. The union executive members agreed, on condition that there was a return to work, to meet the men's three section committees to explain why it had been decided not to press for the £1 a week increase. Work was resumed on Sunday, September 17, at most of the depots involved, and services were normal by the morning of September 19.

### B.T.C. Results for 1949

(Concluded from page 315)

Passenger train punctuality improved compared with 1948 as shown in the following table:—

Year	Long-distance expresses right time or not more than 5 minutes late	Other trains right time
	Per cent.	Per cent.
1949	66.0	71.5
1948	63.3	69.9

The improvement was achieved in spite of a general tightening of timings in the direction of attaining prewar schedules, shortage of locomotive coal of the best quality, and a continuance of numerous temporary speed restrictions.

### Attracting Traffic

Over 18,200 special excursion trains were run, carrying some 6,800,000 passengers, representing £2,400,000 in receipts. In addition 4,400,000 passengers were conveyed at excursion fares by ordinary trains. On April 11 a new facility was introduced experimentally in selected areas with the designation "Springtime" cheap day return tickets. These proved a marked attraction and were continued throughout the year with appropriate seasonal titles. Up to December 17, 1949, 18,250,000 of these tickets were issued.

On May 1, the scope of circular tour tickets was extended to include Ireland, and holiday "runabout" tickets were issued in 55 selected holiday resort areas. Over 338,000 "runabout" tickets were sold. On November 16 special fares were introduced for parties of 25 adults and over, making journeys of over 250 miles. To increase the popularity of day travel to London, the restriction which prevented holders of cheap day tickets from returning from London stations between 4.30 p.m. and 6.30 p.m. was withdrawn, except at Southern Region stations.

## Southern Region Lecture & Debating Society Dinner

The twenty-first anniversary dinner of British Railways, Southern Region, Lecture & Debating Society was held at the Abercorn Rooms, Great Eastern Hotel, Liverpool Street Station, on Monday, September 18. Mr. C. P. Hopkins, President of the Society, was in the chair. Among those present were:—

Messrs. F. L. Back, past Honorary Secretary of the Society; E. Viner Brady, New-Works Engineer, Southern Region; A. H. Cantrell, London (East) Divisional Engineer, Southern Region; T. E. Chimes, Motive Power Superintendent, Southern Region; N. L. Collins, Senior Assistant, London (East) Divisional Superintendent, Southern Region; B. W. C. Cooke, Editor, *The Railway Gazette*; A. W. Coombs, first Honorary Treasurer of the Society; K. W. B. Davies, Honorary Secretary of the Society; C. Grasmann, Public Relations & Publicity Officer, Southern Region; H. N. Greenleaf, Southern Regional Magazine Editor; J. L. Harrington, Chief Officer (Administration), Railway Executive; A. E. Hoare, Assistant Motive Power Superintendent, Southern Region; C. P. Hopkins, President of the Society, and Chief Regional Officer, Southern Region; E. H. Hopper, Assistant Education Officer, Railway Executive; C. F. Klapper; D. R. Lamb, Editor, *Modern Transport*.

Messrs. H. C. Lang, Assistant Chief Officer for Labour & Establishment, Southern Region; L. Maillart, French National Railways; J. Pelham Maitland, past Running Shed Superintendent, Nine Elms, Southern Region; I. C. Marshall, former Vice-Chairman of Committee of the Society; H. S. Maultby, Vice-Chairman of Committee of the Society; W. H. Mepsted, Commercial Superintendent, Southern Region; P. Nunn, London East Divisional Superintendent, Southern Region; R. A. Savill, Chairman of the Society; C. E. R. Sherrington, Director of Research Information Division, British Transport Commission; R. D. Steele, Divisional Motive Power Superintendent, Nine Elms, Southern Region; W. G. Tharby, past Honorary Librarian of the Society; J. R. Turk, Honorary Auditor to the Society; J. A. R. Turner, past Chairman of Committee of the Society; A. P. Whiffin, Assistant to Road Transport Liaison Officer, Southern Region.

In the course of the evening Mr. C. P. Hopkins and Mr. N. L. Collins made a number of presentations on behalf of the Society. Mr. F. L. Corrick, the first Secretary of the Society, was to have been the recipient of a presentation, though he was unable to be present, and succeeding presentations were made to Mr. F. L. Back, Secretary from 1946 to 1950, and to Mr. K. W. B. Davies, the present Secretary, in recognition of his organisation of the 1950 Continental tour. A further presentation was made to Mr. D. J. Piggott of the Workers Travel Association, who acted as interpreter and guide during the tour.

Mr. W. H. F. Mepsted, who proposed the toast "The Society," in place of Mr. R. M. T. Richards, who was unavoidably absent, referred to the formation of the Society in 1929 and the earlier, but short-lived, L.S.W.R. Debating Society. The Society did not confine its activities to lecture and debate, as it had a large library and made a special feature of visits. Referring to integration, he said the Society was a useful medium for debate of new topics.

Mr. J. R. Turk, in response, remembered the pioneers of the Society and said that now with a tradition of 21 years, the Society had a membership of over 1,000. He stressed the value of independent thought in lectures and debates.

Mr. R. A. Savill, in proposing the toast "The Guests and the Ladies," expressed

his pleasure that the guests were not only distinguished in the transport industry, but were also the special friends of the Society. He referred collectively to officers of the Railway Executive and the Southern Region and added some special comments on their other guests, several of whom had judged the Society's prize essay competition.

Mr. C. E. R. Sherrington, in responding to the toast on behalf of the guests, paid special tribute to Mr. Hopkins. The Society presented a perfect example of teamwork and teamspirit and he thought it typified that spirit which lives by enthusiasm.

## Railway Students' Association Convention

Through the customary co-operation of British Railways and others, the Railway Students Association of the London School of Economics, University of London, was enabled to hold the Annual Convention at the Lenton Firs Hall of Residence, University of Nottingham, from August 24 to 28. The party travelled from St. Pancras to Nottingham on the evening of August 24, and on the following morning was the guest of Boots Pure Drug Co. Ltd. at the pharmaceutical factories at Beeston. In the afternoon there were visits to the British Road Services (Nottingham Parcels Group) Depot at Lenton, and to the Anglo-Scotian Mills of A. & F. H. Parkes (Nottingham) Limited, lace manufacturers. In the evening, Mr. S. G. Rushton, Manager of the Nottingham Parcels Group, B.R.S., initiated an informal discussion at Lenton Firs Hall on the organisation and working of his Group.

On Saturday afternoon, August 26, a visit was paid to the British Railways (London Midland Region) mechanised marshalling yards at Toton, and on the next day there was an afternoon tour by a Trent

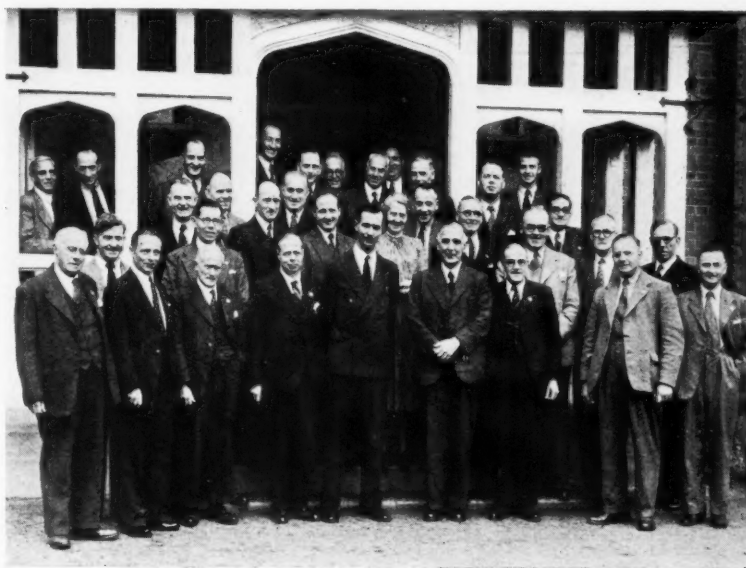
Motor Traction coach to the Dukeries, and visits were also made to Newstead Abbey and Sherwood Forest.

Dealing with the subject, "Training for Leadership," in his paper on Monday, August 28, at Lenton Firs Hall, Mr. V. G. Paige, Assistant Education & Training Officer, Boots Pure Drug Co. Ltd., stressed certain qualities as being essential for leadership in industry, and went on to describe fully the methods used by his firm in its training schemes which included cultural, vocational, physical, and moral development. Training for supervisors included attendance at three different courses, lectures, group discussions, and so on, and besides staff magazines, there were arrangements for overseas travel as a means of acquiring commercial knowledge and experience.

Mr. John Benstead, C.B.E., President of the Railway Students' Association, occupied the chair, and the following were also present: Messrs. C. E. R. Sherrington (Vice-President); A. A. Snowball, District Goods & Passenger Manager, Eastern Region, Nottingham; R. G. Wilson, District Commercial Superintendent, London Midland Region, Derby; L. G. Morris, District Motive Power Superintendent, Eastern Region, Colwick; J. R. Sampson, Assistant District Operating Superintendent, London Midland Region, Nottingham.

The Convention concluded with a reception at the Council House by the Lord Mayor of Nottingham (Councillor H. O. Emmony, J.P.), to whose speech of welcome the President of the Railway Students' Association responded.

**NITRATE RAILWAYS.**—At an extraordinary general meeting of the Nitrate Railways Company, revised resolutions were carried for the reduction of the company's capital by the repayment of £3 per share on the ordinary and preferred converted ordinary shares of £10 each.



Members of the Railway Students' Association attending the Annual Convention at Lenton Firs Hall, Nottingham

Included in the group are the following officers of the Association: Messrs. John Benstead, President; C. E. R. Sherrington, a Vice-President; and D. H. Coombs, Chairman; and Mr. V. G. Paige, Assistant Training & Education Officer, Boots Pure Drug Co. Ltd.; and Mrs. L. Radford, Warden of Lenton Firs Hall

Photo)

(“ Nottingham Journal ”



## Notes and News

**Draughtsmen Required.**—An engineering firm has vacancies for draughtsmen, experienced in design and detail work on ball and roller bearings. See Official Notices on page 319.

**Assistant Chief Mechanical Engineer Required.**—An assistant chief mechanical engineer is required by a British railway company operating in Chile and Bolivia. See Official Notices on page 319.

**Assistant Locomotive Maintenance Engineer Required.**—A British mining company has a vacancy for an assistant locomotive maintenance engineer for the south of Spain. See Official Notices on page 319.

**Traction Executive Required.**—There is a vacancy with a firm of manufacturers for a traction executive experienced in modern practice in straight electric and diesel-electric traction. See Official Notices on page 319.

**Assistant Works Manager Required.**—The Birmingham Railway Carriage & Wagon Co. Ltd., Smethwick, Staffs, has a vacancy for an assistant works manager with experience of heavy engineering and timber construction. See Official Notices on page 319.

**Senior Designer Required.**—British Insulated Callender's Cables Limited have a vacancy at their Prescott Works, Lancs., for a senior designer for the electro-mechanical design of overhead equipment for trolleybus and railway traction. See Official Notices on page 319.

**Luncheon to Railwaymen Mayors.**—At the Euston Hotel, London, on September 5, Mr. John Elliot, Chief Regional Officer, London Midland Region, gave a luncheon to four railwaymen mayors, and was supported on this occasion by Mr. G. L. Darbyshire, former Chief Regional Officer, and other officers of the L.M.R. Those

present are shown in the photograph reproduced below, and include, from left to right, Messrs. G. L. Darbyshire, A. E. Hammett, Commercial Superintendent, B. V. Hughes, Mayor of Conway, F. G. Exton, Mayor of Willesden, F. W. Abraham, Motive Power Superintendent, John Elliot, C.R.O., J. W. Watkins, Operating Superintendent, H. H. Gale, Mayor of Warrington, W. Porter, Mayor of Chesterfield, and George Dow, Public Relations & Publicity Officer.

**Vacancy in Malaya for an Assistant Accountant.**—An assistant accountant, between 25 and 35 years of age, is required by the railway department of the Federation of Malaya, for one tour of three years with prospect of permanent and pensionable employment. See Official Notices on page 319.

**Transport Arbitration Tribunal.**—A meeting of the Transport Arbitration Tribunal will be held in London next Monday, September 25, to hear an application by Arthur J. Maggs Limited, to which the Road Haulage Executive is respondents, for the determination of a question arising under Section 47 of the Transport Act, 1947.

**Ocean Special — Paddington-Plymouth.**—The re-introduction of special boat trains from Paddington in connection with the departure of ocean liners took place on Tuesday, September 5, when the first post-war boat special ran to Plymouth with passengers joining the French liner *Ile de France*. The special train, consisting of saloon coaches and a restaurant car, left Paddington at 8.45 a.m. and was due at Plymouth Docks at 1.30 p.m.

**Withdrawal of Passenger Service.**—Because it is being run at a loss, the direct passenger train service between Knaresborough and Pilmoor on the North Eastern Region of British Railways will be withdrawn on September 25, although a train service will continue to be provided between the two places by other

routes. Alternative bus services to Copgrove, Boroughbridge and Brafferton will continue to be provided by the West Yorkshire Road Car Co. Ltd. There will be no alteration in freight facilities at the stations concerned.

**New Factory for The English Electric Company.**—The surplus Government factory at Clayton-le-Moors, Accrington, has been allocated by the Board of Trade to The English Electric Co. Ltd. for light engineering and the manufacture of electrical equipment. The factory is at present occupied by Courtaulds Limited, which is giving it up because of reorganisation. It is the intention of The English Electric Co. Ltd. to absorb the existing labour force.

**Institute of Transport.**—On September 1, the President of the Institute of Transport, Brig.-General Sir H. Osborne Mance, presided at a luncheon to Editors of the transport press. The President was supported by officers of the Institute and Members of Council. After the luncheon, the President thanked the transport press for the support it had accorded him during his year of office. He also introduced Mr. J. S. Wills, the President-Elect, Mr. B. W. C. Cooke, Editor of *The Railway Gazette*, responded on behalf of the transport press. Sir Frederick Handley Page, Past President, also spoke.

**Antofagasta (Chili) & Bolivia Railway.**—Net receipts from the operation of the Antofagasta (Chili) & Bolivia Railway Company railway and waterworks undertakings during 1949 were £443,654, an increase of £15,444 over 1948. After adding other income and exchange differences and deducting fixed charges and appropriations, there remained a balance of £480,176, compared with £465,556 brought forward. The appropriations include dividends totalling 5 per cent. on the 5 per cent. preference stock, bringing payment of the arrears of dividend on this stock up to June 30, 1940. Although the volume of goods traffic fell by 80,754 tons to 1,218,872 tons, gross re-



Mr. John Elliot, Chief Regional Officer, L.M.R., supported by Mr. G. L. Darbyshire, former C.R.O., and other L.M.R. officers recently gave a luncheon to four railwaymen mayors at Euston. (See paragraph above)

## OFFICIAL NOTICES

## Crown Agents for the Colonies

**ASSISTANT ACCOUNTANT** required by the Railway Department of the Federation of Malaya for one tour of three years with prospect of permanent and pensionable employment. Salary, including gratuity pay, is payable in local currency equivalent at the present Government rate of exchange to £714 a year, rising to £1,078 a year, plus cost-of-living allowance equivalent to £210 a year for single men and up to £434 a year for married men. Commencing salary according to qualifications and experience. Free passages. Liberal leave on full salary. Candidates between 25 and 35 years of age must have had good training and practical experience in the accounts department of a railway and be fully conversant with goods and coaching audit work. Must be familiar with preparation of revenue and expenditure accounts and returns, preparation and use of statistics. Should have knowledge of mechanical accounting systems, control and stock recording of stores costing as applied to mechanical engineering workshops. Apply at once by letter, stating age, full names in block letters, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/23277/3E on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

**ASSISTANT WORKS MANAGER** required with experience heavy engineering and timber construction. Position offers good prospects for satisfactory man. Apply with full particulars, training experience and salary required to the Managing Director, THE BIRMINGHAM RAILWAY CARRIAGE & WAGON CO. LTD., Smethwick 40, Staffs.

**DRAUGHTSMEN** required by engineering company for the following work:—(a) Design and detail work on axle boxes—experience with railway carriage and wagon manufacturers an advantage but not essential; (b) design and detail work on ball and roller bearings. These are good openings with a progressive company for suitable applicants. Apply stating age, experience, technical qualifications, and salary required to Box 848, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

**WANTED** by large British mining company, **ASSISTANT LOCOMOTIVE MAINTENANCE ENGINEER** for South of Spain. Applicants should have had basic workshop experience and some years experience in locomotive, wagon and boiler maintenance. The salary attaching to the post is £700-£750 per annum with substantial additional allowances. Write stating age, whether married or single, and giving particulars of education, experience, and engineering qualifications held. In the case of married applicants ages of children must be given.—Box H 763, c/o STREETS, 110, Old Broad Street, London, E.C.2.

**SITUATION VACANT. ENGINEERING ASSISTANT.** Permanent Way Department, Central Railway, Peru. Salary from £1,000 per annum. Knowledge of Spanish essential. Apply to Secretary, THE PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

**SITUATION VACANT.**—District Traffic Superintendent. Salary £1,000 per annum. Knowledge of Spanish essential. Apply to Secretary, THE PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

**ASSISTANT CHIEF MECHANICAL ENGINEER** required by British railway company operating in Chile and Bolivia. Candidates, preferably A.M.I.Mech.E. and/or B.Sc. (Eng.), must have completed apprenticeship in workshops of railway or locomotive builders, including drawing office experience, and held post not below District Locomotive Superintendent or Works Manager. Salary scale £1,200/£1,500 per annum. Free quarters, passages, allowances, etc., provided. Applications, with full particulars of qualifications and experience and copies of any testimonials held, to be sent to Box 3657, c/o CHARLES BARKER & SONS LTD., 31, Budge Row, London, E.C.4.

**LEADING** manufacturers require Traction Executive capable of carrying high degree of personal responsibility. Candidates must be abreast of modern practice in straight electric and diesel electric traction, preferably with widespread commercial and technical contacts among railway engineers at home and overseas. University degree and age not exceeding 45 an advantage. High salary will be paid to the right man. Congenial conditions of employment and liberal pension scheme. Will candidates kindly submit full particulars in confidence to Box 846, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

**SENIOR DESIGNER** required by British Insulated Callender's Cables Limited, at their Prescott Works, for the electro-mechanical design of overhead equipment for trolleybus and railway traction. Permanent position with superannuation and bonus schemes after twelve months' probationary service. Salary £650 per annum. Applications giving details of qualifications and experience should be made in writing to the Staff Officer, B.I.C.C. LIMITED, Prescott, Lancs.

ceipts at £3,539,135 were higher by £581,095 tons. Working expenses showed an increase of £565,651, or 22 per cent. over 1948, and reached the record total of £3,095,481 for the year.

**Inquiry Opened on Penmaenmawr Accident.**—The Ministry of Transport inquiry into the Irish Mail accident at Penmaenmawr on August 27, when six passengers were killed and 35 injured, opened at Llandudno on September 5, under the presidency of Lt.-Colonel G. R. S. Wilson, Chief Inspecting Officer. The train, carrying 500 passengers, and travelling at speed, ran into a light engine a short distance from Penmaenmawr Station.

**Ticketless Travel Acquittal.**—Prosecuted for travelling on the railway without a ticket and with intent to avoid payment, a man was stated recently to have travelled from Nottingham to Chatham, and at the ticket barrier at Chatham offered a shilling saying that he had travelled from Gravesend. Later, he admitted that he had come from Nottingham and offered a return half ticket from Nottingham to Chatham, saying he had intended to keep this ticket for another journey. Counsel for the defence said that the accused was being summoned for travelling without a ticket and with intent to avoid payment. But he had a ticket, and must have paid for it; therefore there was no case. The Chatham magistrates dismissed the summons.

**Institution of Locomotive Engineers.**—The first general meeting of the Institution of Locomotive Engineers for the session 1950-51 was held on September 20, when Mr. D. R. Carling read a paper on "Locomotive Testing on British Railways." Future general meetings, to be held in the Hall of the Institution of Mechanical Engineers, Storey's Gate, Westminster, S.W.1, at 5.30 p.m., will be as follows: October 25, "Locomotive Feed Water Appliances—The Gifford Centenary," by Mr. T. H. Shields; November 15, the Presidential Address, by Mr. R. A. Riddles; December 13, "Electric Traction Prospects for British Railways," by Mr. S. B. Warder;

January 17, 1951, "Standardisation of Coaching Stock," by Mr. S. G. Smith; February 21, "Modernisation of a Large Motive Power Depot, Polmadie, Scottish Region," by Mr. R. F. Harvey; March 21, annual general meeting, "British Standard Locomotives," by Mr. E. S. Cox; April 18, "Practice and Trend in Development of Diesel Engines with particular reference to Traction," by Mr. G. Jendrassik.

**Railway Queen Crowned.**—The Railway Employees' Carnival jubilee celebrations took place at Belle Vue, Manchester, on Saturday, September 9. The principal event was the crowning of the new Railway Queen, Miss Betty Chester, of Chesterfield, whose father is a yard inspector

at Clay Cross, London Midland Region. The ceremony was performed by Mr. C. K. Bird, Chief Regional Officer, Eastern Region, and Mr. J. M. H. Morris, representing Mr. G. B. Thorneycroft, General Secretary, Railway Clerks Association.

**Great Western of Brazil Railway.**—The directors of the Great Western of Brazil Railway have announced that payment of the agreed price for the cancellation of the contract with the Brazilian Government has been received in London and £3,798,750 has been deposited in the Bank of England. As reported in our issue of July 14, it is hoped to place the company in voluntary liquidation within about six weeks after the receipt of the money. It is expected



Mr. C. K. Bird, Chief Regional Officer, Eastern Region (right), and J. M. H. Morris, Railway Clerks Association, with the Railway Queen, Miss Betty Chester

that the liquidators will be able to pay off the two classes of debentures with accrued interest in about a month from their appointment.

**New Tanks for Soda Silicate.**—Twelve special demountable tanks to convey soda silicate have been completed by the London Midland Region. The tanks, each of which is of 875 gal. capacity, were built up from plates, electrically welded throughout and have a working pressure of 40 lb. per sq. in. They are provided with a heating coil tested to withstand a pressure of 150 lb. per sq. in.

**New Signalling Code, British Railways.**—The new signalling code, of which particulars were given in our issue of September 8, is a Railway Executive code for trains and headlamp code which applies to all Regions of British Railways (not only, as was implied, to the London Midland Region), though there is some modification in the Southern Region. The new code is a further development of unification of practice arising out of nationalisation of the railways.

**Higher Road Haulage Rates Recommended.**—Increased rates for various road traffics are still under negotiation as a result of the recommendation by the Road Haulage Association's Rates Committee that a general increase of 10 per cent. was justified on account of the recent budget. Approaches for increased rates have been made by the Association to traders' organisations, city corporations, Government departments, and other bodies. In some cases, carriers of Ministry of Food traffic have still not come to a satisfactory arrangement as the Ministry has not agreed to a general increase.

## Forthcoming Meetings

September 25 (*Mon.*).—Institute of Traffic Administration, Southampton Centre, at the Chamber of Commerce, at 7.30 p.m. "Control of Shipping in Southampton Water," by Captain R. Smith.

September 27 (*Wed.*).—British Institution of Radio Engineers, at the London School of Hygiene & Tropical Medicine, Keppel Street, W.C.1, at 6.30 p.m. Annual general meeting. Followed at 7.15 p.m. by the Presidential Address by Mr. Paul Adorian.

September 27 (*Wed.*).—East Indian Railway Officers' Dinner, at the Connaught Rooms, Great Queen Street, Kingsway, London, W.C.2, at 6.30 for 7 p.m. Particulars from Mr. E. H. N. Lowther, The Little Gables, Folders Lane, Burgess Hill, Sussex.

September 28 (*Thu.*).—East Indian Railway tea-party, at Stewarts Restaurant, Bond Street, London, from 3.30 to 6 p.m. Particulars from Mr. H. Howe, Farleyedge, Westerham, Kent.

September 28 (*Thu.*).—Engineers' Guild, Metropolitan Branch, at the Lighting Service Bureau, 2, Savoy Hill, London, W.C.2, at 6.15 p.m. Annual general meeting.

September 29 (*Fri.*).—National Smoke Abatement Society. Annual conference at the Winter Gardens, Cliftonville, Margate, at 2.30 p.m. Papers on "Railway Smoke: 1—A Statement of the Problem," by Mr. W. O. Skeat, and "Railway Smoke: 2—The Attack on the Problem," by Mr. M. G. Bennett.

## Railway Stock Market

THE dominating factor in markets earlier this week was a general tendency to await the outcome of the steel debate in the House of Commons. British Funds fell sharply owing to General Election possibilities, but at the time of going to press have tended to rally. If steel nationalisation is effected, it will mean the addition of some £350,000,000 of Steel stock to existing nationalisation securities. The exchange from steel shares into steel stock cannot take place until early next year in any case, but the take-over terms will mean a big loss of income for shareholders, even assuming that new steel stock carried interest at the rate of 3½ per cent. Because of this prospective loss of income, steel shares have remained below their scheduled take-over prices, the market fearing that there might be a fair amount of selling before the exchange into steel stock were due. If nationalisation of steel were effected, by the time of the exchange, market prices of steel shares would probably approximate to their take-over levels.

In contrast with the uncertainty in British Funds, industrial shares have attracted buyers, though elsewhere tin and rubber shares turned easier, talk of peace moves in Korea having been followed by a sharp fall of over £30 in the price of tin to £760 per ton while rubber was down to 3s. 10½d. per lb.

Great Western of Brazil further strengthened to 151s. a total pay-out of at least 155s. being expected in the market. La Guaira & Caracas were firm at 80, with the debentures at 94 on continued hopes that the official take-over terms will be shortly announced. Manila issues were strong, with the "A" debentures at 64 and the 5 per cent. preference at 7s. after news that the Philippines are to be a big U.S. military base.

Antofagasta preference failed to hold all earlier gains and came back to 42½ with the ordinary at 6½. Brazil Rail gold bonds were also lower at 40½, and following their recent advance. Canadian Pacific attracted profit taking, receding to 34½ although the preference stock and 4 per cent. debentures remained firm at 69 and 98½ respectively.

Among Leopoldina stocks, the ordinary eased to 8½ and the preference to 25, while the 4 per cent. debentures were 91 and the 6½ per cent. debentures 128. Never-

theless, the eventual pay-out values are expected in the market to be well above these levels. Leopoldina Terminal 5 per cent. debentures were lower at 85½ and the ordinary units 1s. 3d.

Mexican stocks remained active, due partly to switching into these by foreign holders of sterling securities. National of Mexico 4½ per cent. non-assented bonds were higher at 30½, but Mexican Central "A" bonds at 44½ failed to hold all an earlier gain. United of Havana stocks displayed small irregular movements, the 1906 debentures were 17½ after changing hands up to 18. Elsewhere, Nitrate Rails were again quoted at 75s. and Taltal shares were 14s. 9d.

Road transport shares remained firmly held on their investment merits. Southdown being 112s. 6d., West Riding 60s. 6d., Lancashire Transport 75s., while Ribble 6½ per cent. preference changed hands at 23s. 6d. B.E.T. deferred stock was active, but 460 failed to hold best levels.

Engineering shares were favoured because of rearmament, and also steel shares not on the nationalisation schedule; but nationalisation steels encountered a little selling because if nationalisation is carried through the exchange into steel stock will mean a big loss of income for stockholders. Beardmore eased to 48s. 6d., United Steel to 28s. and Stewarts and Lloyds to 55s. 4½d. although Hadfields at 28s. 9d. were higher on balance. In all cases prices are well below scheduled take-over levels on which the exchange into steel stock would be made in the event of nationalisation. Take-over prices are 53s. 8d. for Beardmore, 30s. 4d. for United Steel, 57s. 4d. for Stewarts and Lloyds, and 30s. 10d. for Hadfields. Moreover, in some cases dividends which are expected to be at last year's rates, fall to be paid before the take-over, assuming that nationalisation eventually takes place.

Locomotive building and engineering shares have remained firm with Hurst Nelson 56s. at Glasgow, Birmingham Wagon 30s. 3d., Vulcan Foundry 22s. 6d., Beyer Peacock 23s. 1½d., North British Locomotive 18s. 7½d., and Wagon Repairs 5s. shares 16s. 7½d. Gloucester Wagon were held at 61s. 3d. and G. D. Peters 5s. shares 17s. 3d. Elsewhere, T. W. Ward showed firmness at 66s. and B.S.A. were steady at 30s. 10½d. the latter on market talk of higher dividend possibilities.

## Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date			
				Total this year	Inc. or dec. compared with 1948/49		Total	Increase or decrease		
							1949/50			
South & Central America	Antofagasta ...	811	10.9.50	£ 76,950	—	£ 28,060	36	£ 2,285,584	—	£ 66,920
	Costa Rica ...	281	July, 1950	c1,273,891	—	c273,499	4	c1,273,891	—	c273,499
	Dorada ...	70	Aug., 1950	42,402	+	9,565	34	312,952	+	80,107
	Inter. Ctl. Amer. ...	794	July, 1950	\$1,092,787	+	\$105,500	30	\$8,124,018	+	\$546,217
	La Guaira ...	22½	Aug., 1950	\$73,776	—	\$33,830	34	\$656,809	—	\$202,414
	Nitrate ...	382	15.8.50	10,816	—	8,656	32	286,336	+	6,203
	Paraguay Cent. ...	274	8.9.50	\$194,935	+	\$44,950	10	\$1,829,580	+	741,189
	Peru Corp. ...	1,050	Aug., 1950	\$8,130,000	+	\$3,124,060	9	\$15,605,000	+	\$5,984,610
	" (Bolivian Section)	66	June, 1950	Bs. 7,924,000	—	Bs. 1,787,620	9	Bs. 15,485,000	+	Bs. 18,403,110
	Salvador ...	100	June, 1950	c121,000	—	c21,000	52	c1,852,000	—	c174,000
Canada	Taltal ...	154	Aug., 1950	\$1,536,466	+	\$590,364	8	\$2,768,375	+	\$741,892
	Canadian National†	23,473	July, 1950	16,786,000	+	2,984,000	30	102,104,000	+	9,344,000
	Canadian Pacific†	17,037	July, 1950	11,059,000	+	1,309,000	30	70,161,000	+	1,998,000
Various	Barsi Light* ...	167	July, 1950	44,107	+	1,887	17	145,045	—	5
	Egyptian Delta ...	607	10.8.50	16,458	—	3,493	19	217,368	—	20,234
	Gold Coast ...	536	July, 1950	237,178	—	9,039	18	959,701	+	25,876
	Mid. of W. Australia	277	June, 1950	34,684	+	5,305	52	379,942	+	29,063
	Nigeria ...	1,900	Jan., 1950	502,360	+	38,978	44	5,017,814	+	266,573
	South Africa ...	13,347	19.8.50	1,719,310	+	199,295	22	32,512,050	+	2,716,033
	Victoria ...	4,744	May, 1950	1,875,901	+	371,323	48	—	—	—

\* Receipts are calculated at 1s. 6d. to the rupee

† Calculated at \$3 to £1